TECHNICAL & SERVICE MANUAL

SANYO

KS0951 / C0951, CL0951
KS1251 / C1251, CL1251
KS1852 / C1852, CL1852

FILE NO.

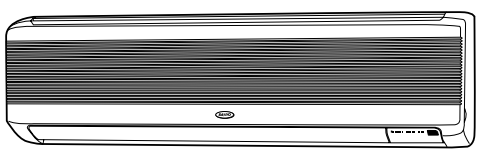
Destination: U.S.A.

SPLIT SYSTEM AIR CONDITIONER

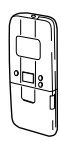
Indoor Model No.	Product Code No.
KS0951	1 852 067 95
KS1251	1 852 067 96
KS1852	1 852 068 34

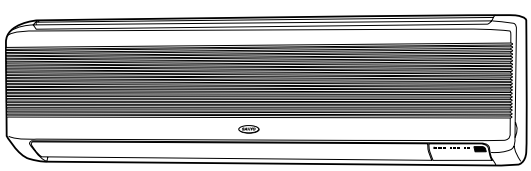
Outdoor Model No.	Product Code No.
C0951	1 852 067 97
CL0951	1 852 069 44
C1251	1 852 067 98
CL1251	1 852 067 99
C1852	1 852 068 35
CL1852	1 852 068 36

Indoor Unit

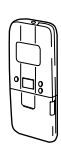


KS0951
KS1251

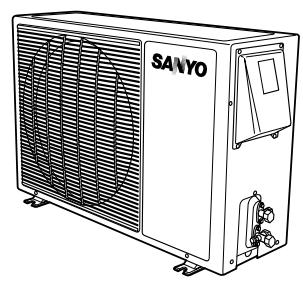




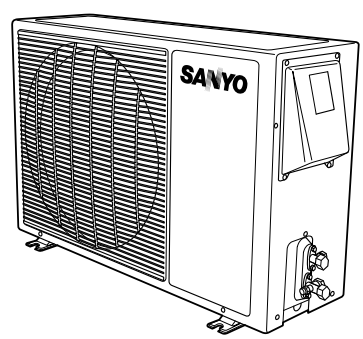
KS1852



Outdoor Unit



C0951, CL0951
C1251, CL1251



C1852, CL1852

Revised Edition

JUL. 2000

To reflect various changes and improvements, this manual replaces the earlier Technical & Service Manual for these models.
You are requested to dispose of the earlier document and substitute this new one.

REFERENCE NO. **SM700433**
Ⓦ

IMPORTANT!
Please Read Before Starting

This air conditioning system meets strict safety and operating standards. As the installer or service person, it is an important part of your job to install or service the system so it operates safely and efficiently.

For safe installation and trouble-free operation, you must:

- Carefully read this instruction booklet before beginning.
- Follow each installation or repair step exactly as shown.
- Observe all local, state, and national electrical codes.
- Pay close attention to all warning and caution notices given in this manual.

WARNING This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.

CAUTION This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.

If Necessary, Get Help

These instructions are all you need for most installation sites and maintenance conditions. If you require help for a special problem, contact our sales/service outlet or your certified dealer for additional instructions.

In Case of Improper Installation

The manufacturer shall in no way be responsible for improper installation or maintenance service, including failure to follow the instructions in this document.

SPECIAL PRECAUTIONS

WARNING When Wiring

ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH. ONLY A QUALIFIED, EXPERIENCED ELECTRICIAN SHOULD ATTEMPT TO WIRE THIS SYSTEM.

- Do not supply power to the unit until all wiring and tubing are completed or reconnected and checked.
- Highly dangerous electrical voltages are used in this system. Carefully refer to the wiring diagram and these instructions when wiring. Improper connections and inadequate grounding can cause **accidental injury or death.**
- **Ground the unit** following local electrical codes.
- Connect all wiring tightly. Loose wiring may cause overheating at connection points and a possible fire hazard.

When Transporting

Be careful when picking up and moving the indoor and outdoor units. Get a partner to help, and bend your knees when lifting to reduce strain on your back. Sharp edges or thin aluminum fins on the air conditioner can cut your fingers.

When Installing…

…In a Ceiling or Wall

Make sure the ceiling/wall is strong enough to hold the unit's weight. It may be necessary to construct a strong wood or metal frame to provide added support.

…In a Room

Properly insulate any tubing run inside a room to prevent "sweating" that can cause dripping and water damage to walls and floors.

…In Moist or Uneven Locations

Use a raised concrete pad or concrete blocks to provide a solid, level foundation for the outdoor unit. This prevents water damage and abnormal vibration.

…In an Area with High Winds

Securely anchor the outdoor unit down with bolts and a metal frame. Provide a suitable air baffle.

…In a Snowy Area (for Heat Pump-type Systems)

Install the outdoor unit on a raised platform that is higher than drifting snow. Provide snow vents.

When Connecting Refrigerant Tubing

- Use the flare method for connecting tubing.
- Apply refrigerant lubricant to the matching surfaces of the flare and union tubes before connecting them, then tighten the nut with a torque wrench for a leak-free connection.
- Check carefully for leaks before starting the test run.

When Servicing

- Turn the power OFF at the main power box (mains) before opening the unit to check or repair electrical parts and wiring.
- Keep your fingers and clothing away from any moving parts.
- Clean up the site after you finish, remembering to check that no metal scraps or bits of wiring have been left inside the unit being serviced.

Others

CAUTION

- Ventilate any enclosed areas when installing or testing the refrigeration system. Escaped refrigerant gas, on contact with fire or heat, can produce dangerously toxic gas.
- Confirm upon completing installation that no refrigerant gas is leaking. If escaped gas comes in contact with a stove, gas water heater, electric room heater or other heat source, it can produce dangerously toxic gas.

Table of Contents

Page

1. OPERATING RANGE 1

2. SPECIFICATIONS

2-1. Unit Specifications 2
2-2. Major Component Specifications 5
2-3. Other Component Specifications 11

3. DIMENSIONAL DATA

3-1. Unit 13

4. REFRIGERANT FLOW DIAGRAM

4-1. Refrigerant Flow Diagram 17

5. PERFORMANCE DATA

5-1. Performance Charts 18
5-2. Air Throw Distance Charts 20
5-3. Cooling Capacity 22

6. ELECTRICAL DATA

6-1. Electrical Characteristics 26
6-2. Electric Wiring Diagrams 27

7. INSTALLATION INSTRUCTIONS

7-1. Installation Site Selection 37
7-2. Remote Control Unit Installation Position 39
7-3. Address Switches 40

8. FUNCTION

8-1. Room Temperature Control 41
8-2. Dry Operation (Dehumidification) 42
8-3. Freeze Prevention 42
8-4. Outdoor Fan Speed Control (CL×××× models only) 43

9. TROUBLESHOOTING

9-1. Check Before and After Troubleshooting 44
9-2. Air Conditioner Does Not Operate 45
9-3. Some Part of Air Conditioner Does Not Operate 49
9-4. Air Conditioner Operates, but Abnormalities are Observed 51
9-5. If a Sensor is Defective 52

10. CHECKING ELECTRICAL COMPONENTS

10-1. Measurement of Insulation Resistance 53
10-2. Checking Continuity of Fuse on PCB Ass'y 54
10-3. Checking Motor Capacitor 54

APPENDIX **INSTRUCTION MANUAL**

1. OPERATING RANGE

KS0951 / C0951
KS1251 / C1251
KS1852 / C1852

Temperature	Indoor Air Intake Temp.	Outdoor Air Intake Temp.
Maximum	95°F DB / 71°F WB	115°F DB
Minimum	67°F DB / 57°F WB	67°F DB

KS0951 / CL0951
KS1251 / CL1251
KS1852 / CL1852

Temperature	Indoor Air Intake Temp.	Outdoor Air Intake Temp.
Maximum	95°F DB / 71°F WB	115°F DB
Minimum	67°F DB / 57°F WB	0°F DB

2. SPECIFICATIONS

2-1. Unit Specifications

(1) Indoor unit **KS0951**
Outdoor unit **C0951 / CL0951**

	Cooling
Voltage Rating	115V

Performance			Cooling
Capacity	kW		2.64
	BTU/h		9,000
Air circulation (High)	ft^3/min		270 (7.65)
Moisture removal (High)	Pints/h		2.0

Electrical Rating			Cooling
Available voltage range	V		104 – 126
Running amperes	A		8.8
Power input	W		900
Power factor	%		89
SEER	BTU/W		10.0
Compressor locked rotor amperes	A		49

Features			
Controls / Temperature control			Microprocessor / I.C. thermostat
Control unit			Wireless remote control unit
Timer			ON / OFF 12 hours, 1-hour OFF
Fan speeds	Indoor / Outdoor		3 and Auto / 1 (Hi)
Airflow direction (Indoor)		Horizontal	Manual
		Vertical	Auto
Air filter			Washable
Compressor			Rotary (Hermetic)
Refrigerant / Amount charged at shipment		lb. (kg)	1.28 (0.58)
Refrigerant control			Capillary tube
Operation sound	Indoor: Hi / Me / Lo	dB-A	38 / 34 / 32
	Outdoor: Hi	dB-A	48
Refrigerant tubing connections			Flare
Max allowable tubing length at shipment		ft. (m)	25 (7.5)
Refrigerant tubing diameter	Narrow tube	inch (mm)	1/4 (6.35)
	Wide tube	inch (mm)	3/8 (9.52)

Dimensions & Weight			Indoor Unit	Outdoor Unit
Unit dimensions	Height	inch (mm)	10-5/8 (270)	21-1/4 (540)
	Width	inch (mm)	31-11/16 (805)	31-1/2 (800)
	Depth	inch (mm)	6-31/32 (177)	11-13/32 (290)
Package dimensions	Height	inch (mm)	9-13/16 (249)	23-31/32 (609)
	Width	inch (mm)	33-21/32 (855)	38-5/8 (981)
	Depth	inch (mm)	13-5/16 (338)	16-3/16 (411)
Weight	Net	lb. (kg)	17.6 (8.0)	66.1 (30)
	Shipping	lb. (kg)	22.0 (10.0)	75.0 (34)
Shipping volume		cu.ft (m^3)	2.51 (0.071)	8.67 (0.246)

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Remarks: Rating conditions are
Cooling: Indoor air temperature 80°F D.B. / 67°F W.B.
Outdoor air temperature 95°F D.B. / 75°F W.B.

(2) Indoor unit **KS1251**
Outdoor unit **C1251 / CL1251**

	Cooling
Voltage Rating	115V

Performance			Cooling
Capacity		kW	3.46
		BTU/h	11,800
Air circulation (High)		ft^3/min	330 (9.35)
Moisture removal (High)		Pints/h	3.4

Electrical Rating		Cooling
Available voltage range	V	104 – 126
Running amperes	A	10.9
Power input	W	1,200
Power factor	%	96
SEER	BTU/W	10.2
Compressor locked rotor amperes	A	60

Features			
Controls / Temperature control			Microprocessor / I.C. thermostat
Control unit			Wireless remote control unit
Timer			ON / OFF 12 hours, 1-hour OFF
Fan speeds	Indoor / Outdoor		3 and Auto / 1 (Hi)
Airflow direction (Indoor)		Horizontal	Manual
		Vertical	Auto
Air filter			Washable
Compressor			Rotary (Hermetic)
Refrigerant / Amount charged at shipment		lb. (kg)	1.76 (0.8)
Refrigerant control			Capillary tube
Operation sound	Indoor: Hi / Me / Lo	dB-A	41 / 38 / 34
	Outdoor: Hi	dB-A	48
Refrigerant tubing connections			Flare
Max allowable tubing length at shipment		ft. (m)	25 (7.5)
Refrigerant tubing diameter	Narrow tube	inch (mm)	1/4 (6.35)
	Wide tube	inch (mm)	1/2 (12.7)

Dimensions & Weight			Indoor Unit	Outdoor Unit
Unit dimensions	Height	inch (mm)	10-5/8 (270)	21-1/4 (540)
	Width	inch (mm)	31-11/16 (805)	31-1/2 (800)
	Depth	inch (mm)	6-31/32 (177)	11-13/32 (290)
Package dimensions	Height	inch (mm)	9-13/16 (249)	23-31/32 (609)
	Width	inch (mm)	33-21/32 (855)	38-5/8 (981)
	Depth	inch (mm)	13-5/16 (338)	16-3/16 (411)
Weight	Net	lb. (kg)	17.6 (8.0)	75.0 (34)
	Shipping	lb. (kg)	22.0 (10.0)	83.8 (38)
Shipping volume		cu.ft (m^3)	2.51 (0.071)	8.67 (0.246)

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Remarks: Rating conditions are
Cooling: Indoor air temperature 80°F D.B. / 67°F W.B.
Outdoor air temperature 95°F D.B. / 75°F W.B.

(3) Indoor unit **KS1852**
Outdoor unit **C1852/CL1852**

	Cooling
Voltage Rating	230 / 208V

Performance			Cooling
Capacity		kW	4.98 / 4.84
		BTU/h	17,000 / 16,500
Air circulation (High)		ft^3/min	390 (11.1)
Moisture removal (High)		Pints/h	4.5 / 4.3

Electrical Rating			Cooling
Available voltage range		V	187 – 253
Running amperes		A	7.8 / 8.4
Power input		W	1,720 / 1,670
Power factor		%	96 / 96
SEER		BTU/W	10.4
Compressor locked rotor amperes		A	43

Features			
Controls / Temperature control			Microprocessor / I.C. thermostat
Control unit			Wireless remote control unit
Timer			ON / OFF 12 hours, 1-hour OFF
Fan speeds	Indoor / Outdoor		3 and Auto / 1 (Hi)
Airflow direction (Indoor)		Horizontal	Manual
		Vertical	Auto
Air filter			Washable
Compressor			Rotary (Hermetic)
Refrigerant / Amount charged at shipment		lb. (kg)	3.59 (1.63)
Refrigerant control			Capillary tube
Operation sound	Indoor: Hi / Me / Lo	dB-A	41 / 38 / 36
	Outdoor: Hi	dB-A	52
Refrigerant tubing connections			Flare
Max allowable tubing length at shipment		ft. (m)	25 (7.5)
Refrigerant tubing diameter	Narrow tube	inch (mm)	1/4 (6.35)
	Wide tube	inch (mm)	5/8 (15.88)

Dimensions & Weight			Indoor Unit	Outdoor Unit
Unit dimensions	Height	inch (mm)	11-7/32 (285)	24-19/32 (625)
	Width	inch (mm)	39-3/16 (995)	34-21/32 (880)
	Depth	inch (mm)	7-23/32 (196)	12-19/32 (320)
Package dimensions	Height	inch (mm)	10-7/8 (276)	27-15/16 (710)
	Width	inch (mm)	42-1/8 (1,070)	40-9/16 (1,030)
	Depth	inch (mm)	14-9/32 (363)	16-3/16 (411)
Weight	Net	lb. (kg)	26.5 (12.0)	104 (47.0)
	Shipping	lb. (kg)	33 (15.0)	112 (51.0)
Shipping volume		cu.ft (m^3)	3.78 (0.107)	10.6 (0.301)

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Remarks: Rating conditions are
Cooling: Indoor air temperature 80°F D.B. / 67°F W.B.
Outdoor air temperature 95°F D.B. / 75°F W.B.

2-2. Major Component Specifications

2-2-1. Indoor Unit

(1) Indoor unit **KS0951**

Control PCB			
	Part No.		POW-KS095A, POW-KS095B
	Controls		Microprocessor
	Control circuit fuse		AC 115V – 3A

Remote Control Unit			RCS-1S2U

Fan & Fan Motor			
	Type		Cross-flow
	Q'ty … Dia. and length	inch (mm)	1 … ø 95 / L617 (ø 3-3/4 / L24-9/32)
	Fan motor model … Q'ty		KFV4-21H1PA … 1P
	Nominal output	W	20
	Coil resistance (ambient temp. 68°F (20°C))	Ω	BLU – BRN: 100.9 BLU – PNK: 127.5
	Run capacitor	μF	3.5
		VAC	220

Flap Motor			
	Type		Stepping motor
	Model		MP24GA1
	Rating		DC12V
	Coil resistance (ambient temp. 77°F (25°C))	Ω	WHT – BLU (respectively 4 wires): 380 ± 7%

Heat Exchanger Coil			
	Coil		Aluminum plate fin / Copper tube
	Rows		2
	Fin pitch	inch (mm)	1/16 (1.4)
	Face area	ft^2 (m^2)	1.40 (0.130)

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

(2) Indoor unit **KS1251**

Control PCB		
Part No.		POW-KS125A, POW-KS095B
Controls		Microprocessor
Control circuit fuse		AC 115V – 3A
Remote Control Unit		RCS-1S2U
Fan & Fan Motor		
Type		Cross-flow
Q'ty … Dia. and length	inch (mm)	1 … ø 95 / L617 (ø 3-3/4 / L24-9/32)
Fan motor model … Q'ty		KFV4-21H1PA … 1P
Nominal output	W	20
Coil resistance (ambient temp. 68°F (20°C))	Ω	BLU – BRN: 100.9 BLU – PNK: 127.5
Run capacitor	μF	3.5
	VAC	220
Flap Motor		
Type		Stepping motor
Model		MP24GA1
Rating		DC12V
Coil resistance (ambient temp. 77°F (25°C))	Ω	WHT – BLU (respectively 4 wires): 380 ± 7%
Heat Exchanger Coil		
Coil		Aluminum plate fin / Copper tube
Rows		2
Fin pitch	inch (mm)	1/16 (1.4)
Face area	ft^2 (m^2)	1.40 (0.130)

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

(3) Indoor unit **KS1852**

Control PCB		
Part No.		POW-KS1852
Controls		Microprocessor
Control circuit fuse		AC 208 / 230V – 3A
Remote Control Unit		RCS-1S2U
Fan & Fan Motor		
Type		Cross-flow
Q'ty … Dia. and length	inch (mm)	1 … ø 88 / L746 (ø3-15/32 / L29-3/8)
Fan motor model … Q'ty		UF4-31D6P-S … 1P
Nominal output	W	30
Coil resistance (ambient temp. 68°F (20°C))	Ω	WHT – BRN: 204 WHT – PNK: 158
Run capacitor	μF	2.0
	VAC	440
Flap Motor		
Type		Stepping motor
Model		MP24GA2
Rating		DC12V
Coil resistance (ambient temp. 77°F (25°C))	Ω	Each terminals (1–2, 1–3, 1–4, 1–5) : 400 ± 7%
Heat Exchanger Coil		
Coil		Aluminum plate fin / Copper tube
Rows		2
Fin pitch	inch (mm)	1/16 (1.3)
Face area	ft^2 (m^2)	1.68 (0.156)

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

2-2-2. Outdoor Unit

(1) Outdoor unit **C0951 / CL0951**

Control PCB		
Part No.		— / POW-CL0951
Controls		—
Control Circuit Fuse		AC 250V – 3A

Compressor			
Type			Rotary (Hermetic)
Compressor model			C-1R75H2R
Nominal output		W	750
Compressor oil … Amount		cc	SUNISO 4GSD-T … 350
Coil resistance (ambient temp. 68°F (20°C))		Ω	C – R: 0.841 C – S: 2.831
Safety devices	Type		External (OLR)
	Overload relay		MRA99111-9200
Run capacitor		μF	40
		VAC	400
Crank case heater			— / 115V, 20W

Fan & Fan Motor			**C0951**	**CL0951**
Type			Propeller	
Q'ty … Dia. and length		inch. (mm)	1 … 16-17/32 (ø 420)	1 … 16-17/32 (ø 420)
Fan motor model … Q'ty			UE6-21BA1P … 1	UE6T-21J1P … 1
No. of poles … rpm (115V, High)			6 … 630	6 … 630
Nominal output		W	20	20
Coil resistance (ambient temp. 68°F (20°C))		Ω	BLU – BRN: 45.3 BLU – PNK: 50.5	BLU – BRN: 45.3 BLU – PNK: 50.5
Run capacitor		μF	7	7
		VAC	220	220

Heat Exchanger Coil		
Coil		Aluminum plate fin / Copper tube
Rows		1
Fin pitch	inch (mm)	1/16 (1.4)
Face area	ft^2 (m^2)	3.27 (0.304)

External Finish	Acrylic baked-on enamel finish

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

(2) Outdoor unit **C1251 / CL1251**

Control PCB		
Part No.		— / POW-CL1251
Controls		—
Control Circuit Fuse		AC 250V – 3A

Compressor			
Type			Rotary (Hermetic)
Compressor model			C-R91H2G
Nominal output		W	900
Compressor oil … Amount		cc	SUNISO 4GSD-T … 470
Coil resistance (ambient temp. 68°F (20°C))		Ω	C – R: 0.576 C – S: 2.261
Safety devices	Type		External (OLR)
	Overload relay		MRA98693-9200
Run capacitor		µF	40
		VAC	400
Crank case heater			— / 115V, 20W

Fan & Fan Motor			**C1251**	**CL1251**
Type			Propeller	
Q'ty … Dia. and length		inch. (mm)	1 … 16-17/32 (ø 420)	1 … 16-17/32 (ø 420)
Fan motor model … Q'ty			UE6-21BA1P … 1	UE6T-21J1P … 1
No. of poles … rpm (115V, High)			6 … 630	6 … 630
Nominal output		W	20	20
Coil resistance (ambient temp. 68°F (20°C))		Ω	BLU – BRN: 45.3 BLU – PNK: 50.5	BLU – BRN: 45.3 BLU – PNK: 50.5
Run capacitor		µF	8	8
		VAC	220	220

Heat Exchanger Coil		
Coil		Aluminum plate fin / Copper tube
Rows		1
Fin pitch	inch (mm)	1/16 (1.4)
Face area	ft^2 (m^2)	3.27 (0.304)

External Finish	Acrylic baked-on enamel finish

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

(3) Outdoor unit **C1852 / CL1852**

Control PCB		
Part No.		— / POW-CL125
Controls		—
Control Circuit Fuse		AC 250V – 5A

Compressor			
Type			Rotary (Hermetic)
Compressor model			C-R132H6D
Nominal output		W	1,300
Compressor oil … Amount		cc	SUNISO 4GSD-T … 500
Coil resistance (ambient temp. 68°F (20°C))		Ω	C – R: 1.442 C – S: 2.567
Safety devices	Type		External (OLR)
	Overload relay		MRA99117-9200
Run capacitor		µF	35
		VAC	400
Crank case heater			— / 230V, 20W

Fan & Fan Motor			**C1852**	**CL1852**
Type			Propeller	
Q'ty … Dia. and length		inch. (mm)	1 … 16-17/32 (ø 420)	1 … 16-17/32 (ø 420)
Fan motor model … Q'ty			KFG6-51E6P … 1	KFG6T-51B6P … 1
No. of poles … rpm (230V, High)			6 … 830	6 … 830
Nominal output		W	50	50
Coil resistance (ambient temp. 68°F (20°C))		Ω	WHT – BRN: 102 PNK – WHT: 199	WHT – BRN: 102 PNK – WHT: 199
Run capacitor		µF	2	2
		VAC	440	440

Heat Exchanger Coil		
Coil		Aluminum plate fin / Copper tube
Rows		2
Fin pitch	inch (mm)	1/16 (1.6)
Face area	ft^2 (m^2)	4.0 (0.372)

External Finish	Acrylic baked-on enamel finish

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

2-3. Other Component Specifications

2-3-1. Indoor Unit

(1) Indoor unit **KS0951**

Transformer		**ATR-T4**
Rating	Primary	AC 115V, 60Hz
	Secondary	19V, 0.5A

Thermistor (Coil sensor)		**DTN-TKS131B**
Resistance	kΩ	32°F (0°C) 15 ± 2%

Thermistor (Room sensor)		**DTN-TKS134B**
Resistance	kΩ	77°F (25°C) 5 ± 3%

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

(2) Indoor unit **KS1251**

Transformer		**ATR-T4**
Rating	Primary	AC 115V, 60Hz
	Secondary	19V, 0.5A

Thermistor (Coil sensor)		**DTN-TKS131B**
Resistance	kΩ	32°F (0°C) 15 ± 2%

Thermistor (Room sensor)		**DTN-TKS134B**
Resistance	kΩ	77°F (25°C) 5 ± 3%

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

(3) Indoor unit **KS1852**

Transformer		**ATR-T5**
Rating	Primary	AC 230V, 60Hz
	Secondary	19V, 0.5A

Thermistor (Coil sensor)		**DTN-TKS131B**
Resistance	kΩ	32°F (0°C) 15 ± 2%

Thermistor (Room sensor)		**DTN-TKS142B**
Resistance	kΩ	77°F (25°C) 5 ± 3%

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

2-3-2. Outdoor Unit

(1) Outdoor unit **C0951 / CL1251**

PTC Thermistor		**PS2A E20-470**
Resistance	Ω (at 77°F (25°C))	47 ± 25%

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

(2) Outdoor unit **CL0951 / CL1251**

Transformer (TR)		**ATR-T4**
Rating	Primary	AC 115V, 60Hz
	Secondary	DC 19V, 0.5A
	Capacity	5VA

Heater Relay		**HH62S**
Coil rating		AC 110–120V
Coil resistance	Ω (at 68°F (20°C))	—
Contact rating		AC 250V, 10A

Thermistor (Air temp.)		**DTNTKS132B**
Resistance	kΩ	32°F (0°C) 15 ± 2%

PTC Thermistor		**PS2A E20-470**
Resistance	Ω (at 77°F (25°C))	47 ± 25%

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

(3) Outdoor unit **C1852 / CL1852**

Transformer (TR)		**— / ATR-T5**
Rating	Primary	AC 230V, 60Hz
	Secondary	— / DC 19V, 0.5A
	Capacity	5VA

Heater Relay		**— / HH62S**
Coil rating		AC 220–240V
Coil resistance	Ω (at 68°F (20°C))	—
Contact rating		AC 250V, 10A

Thermistor (Air temp.)		**— / DTNTKS132B**
Resistance	kΩ	32°F (0°C) 15 ± 2%

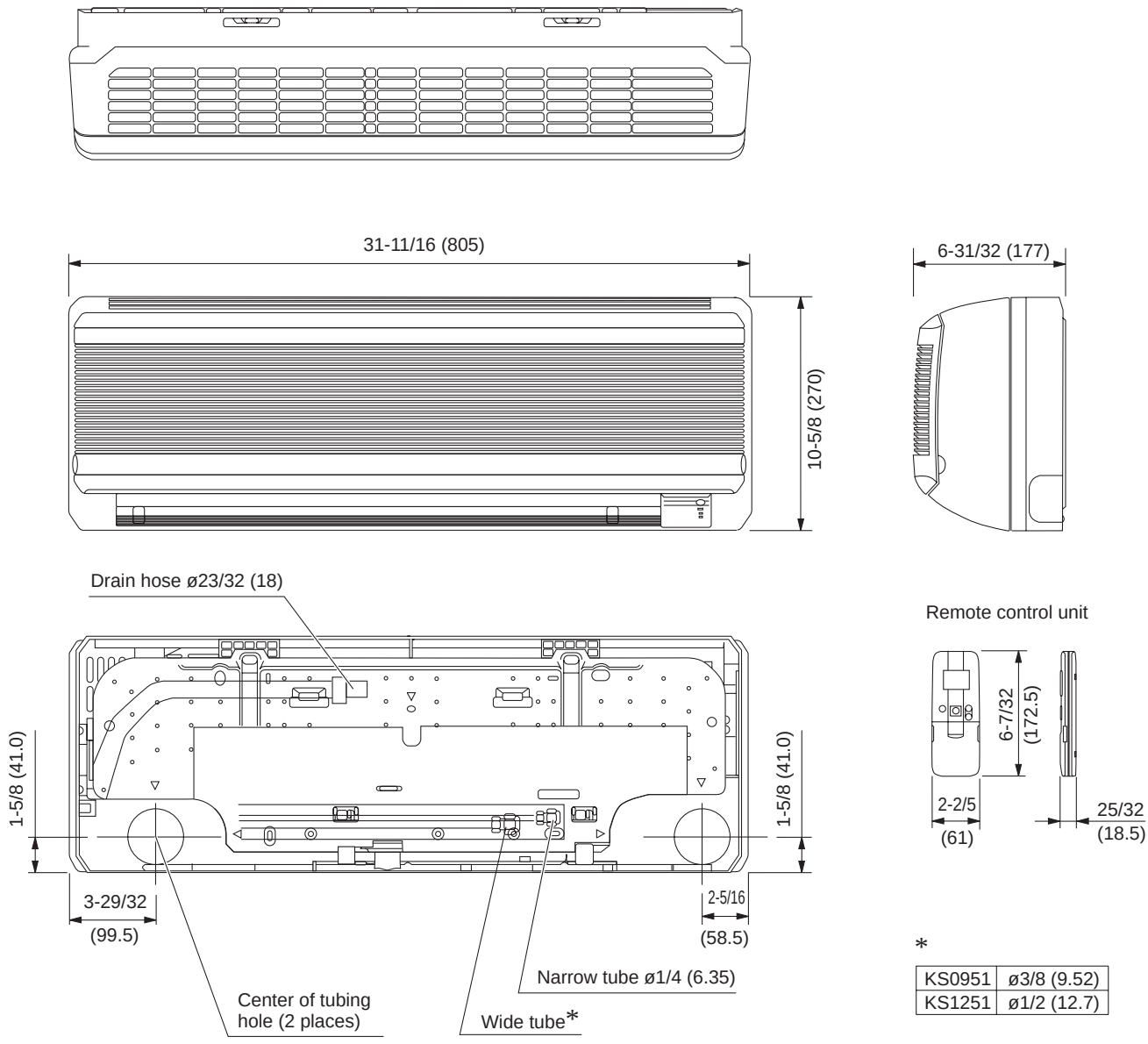
DATA SUBJECT TO CHANGE WITHOUT NOTICE.

3. DIMENSIONAL DATA

3-1. Unit

3-1-1. Indoor Unit

(1) Indoor unit **KS0951 / KS1251**

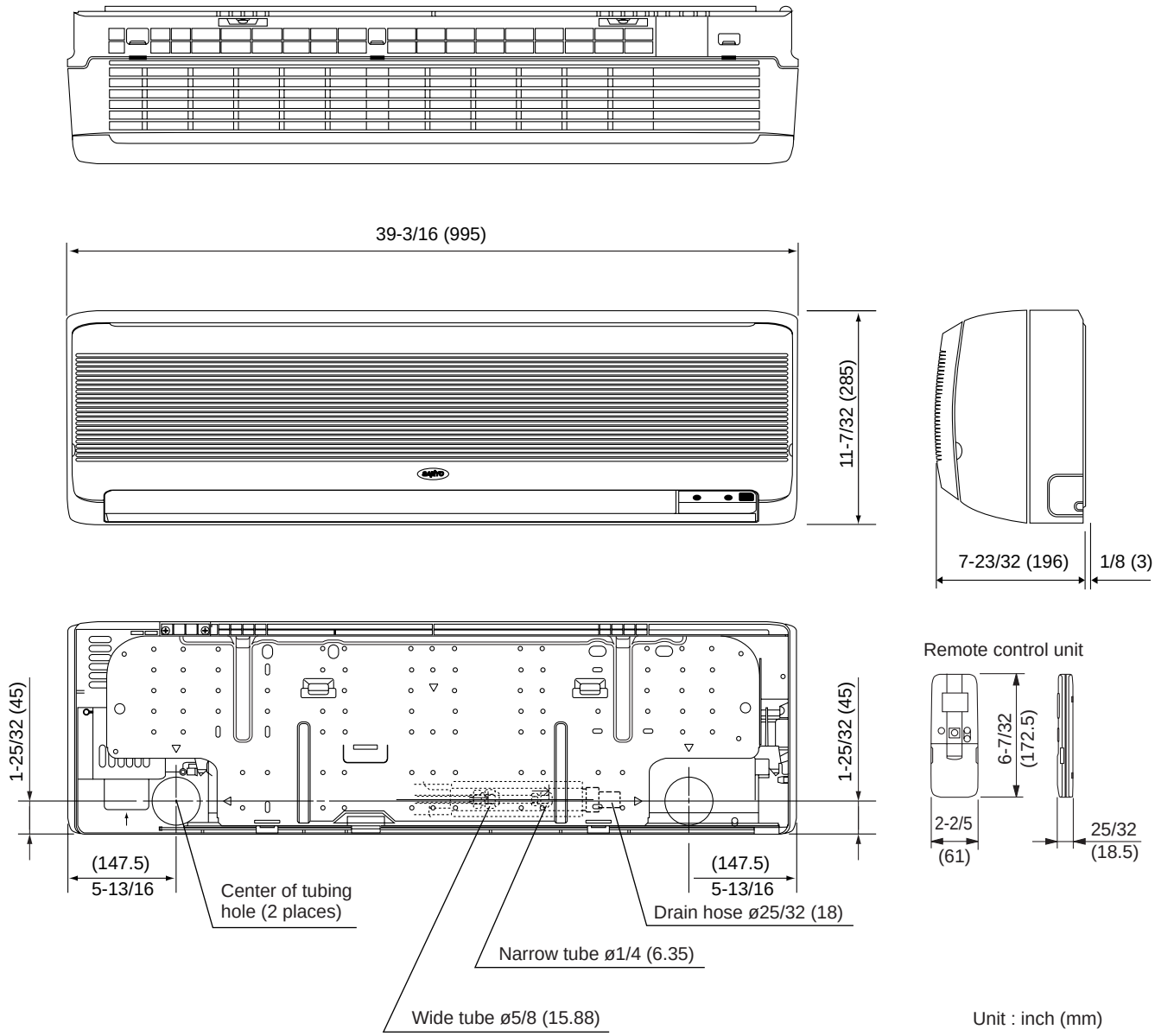


*

KS0951	ø3/8 (9.52)
KS1251	ø1/2 (12.7)

Unit: inch (mm)

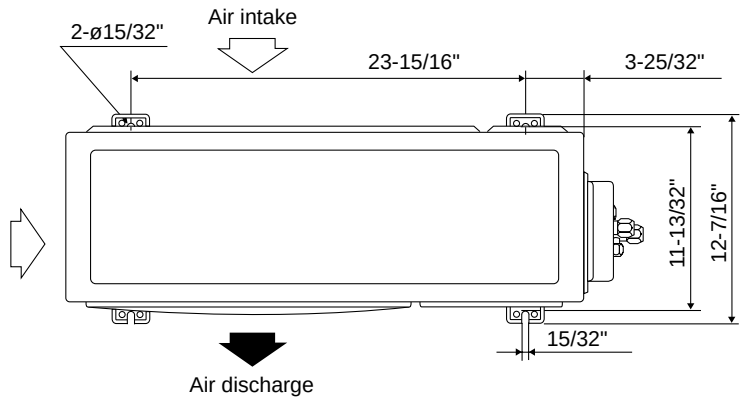
(2) Indoor unit **KS1852**

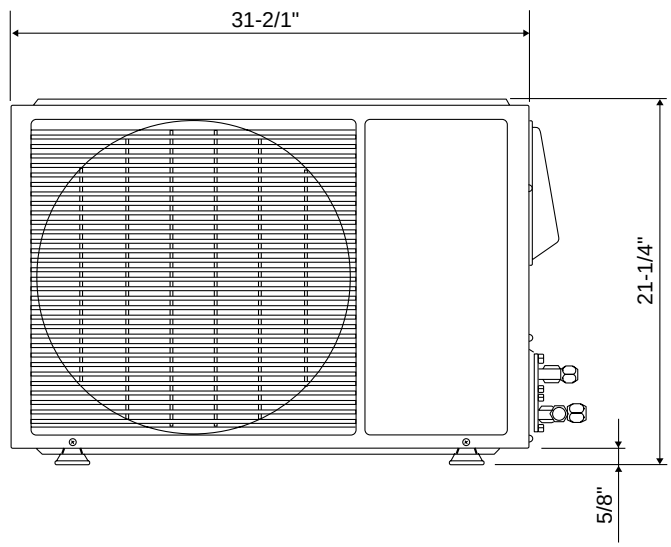


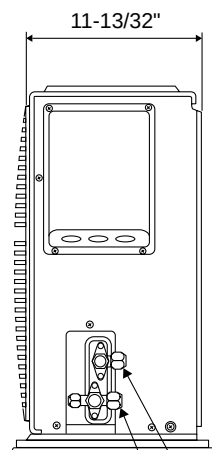
Unit : inch (mm)

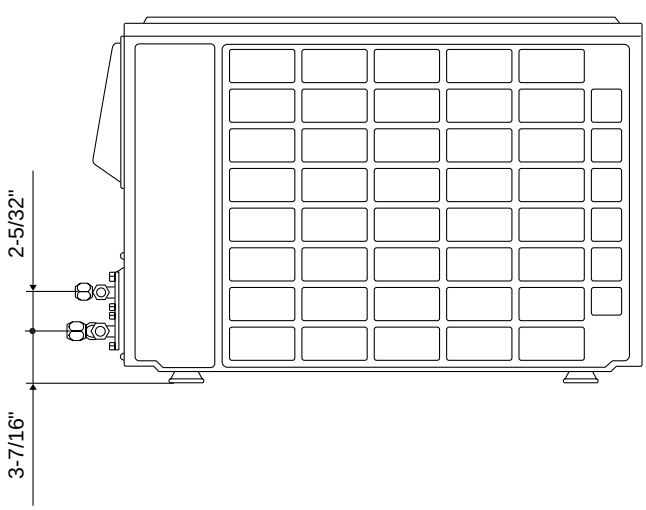
3-1-2. Outdoor Unit

(1) Outdoor unit **C0951 / CL0951 / C1251 / CL1251**









Narrow tube service valve
ø1/4 (6.35)

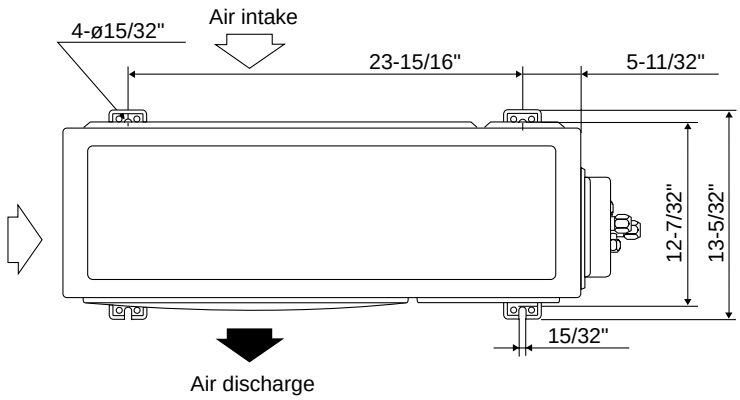
Wide tube service valve*

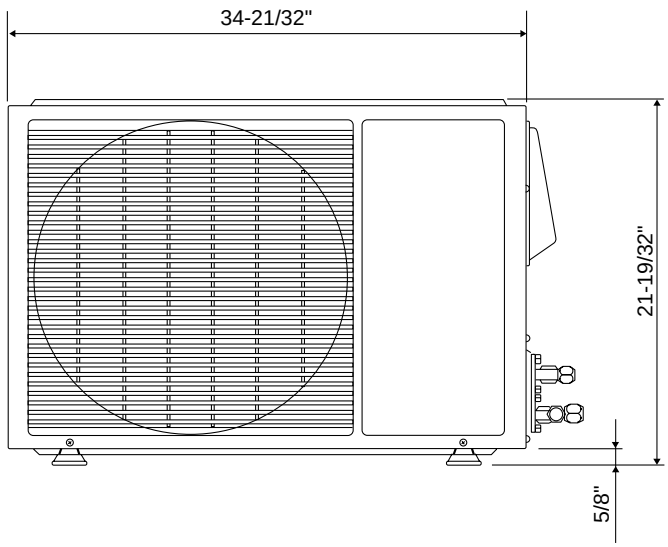
*

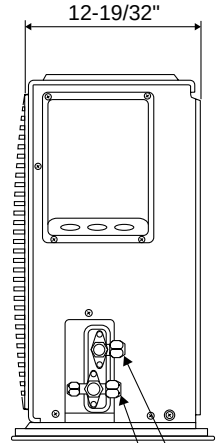
0951	ø3/8 (9.52)
1251	ø1/2 (12.7)

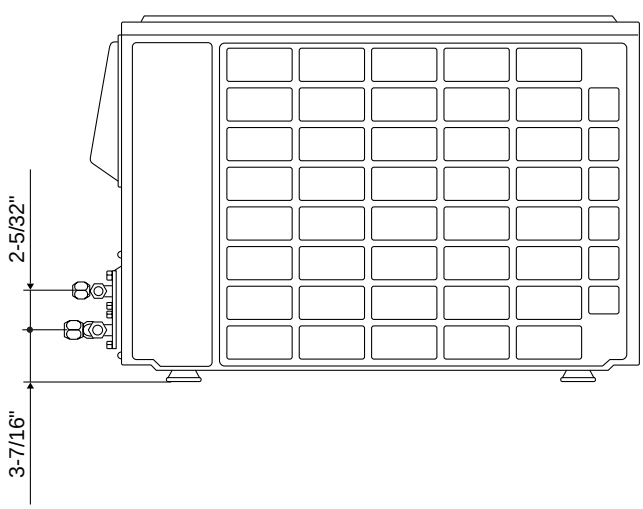
Unit: inch (mm)

(2) Outdoor unit **C1852 / CL1852**









Narrow tube service valve
ø1/4 (6.35)

Wide tube service valve
ø5/8 (15.88)

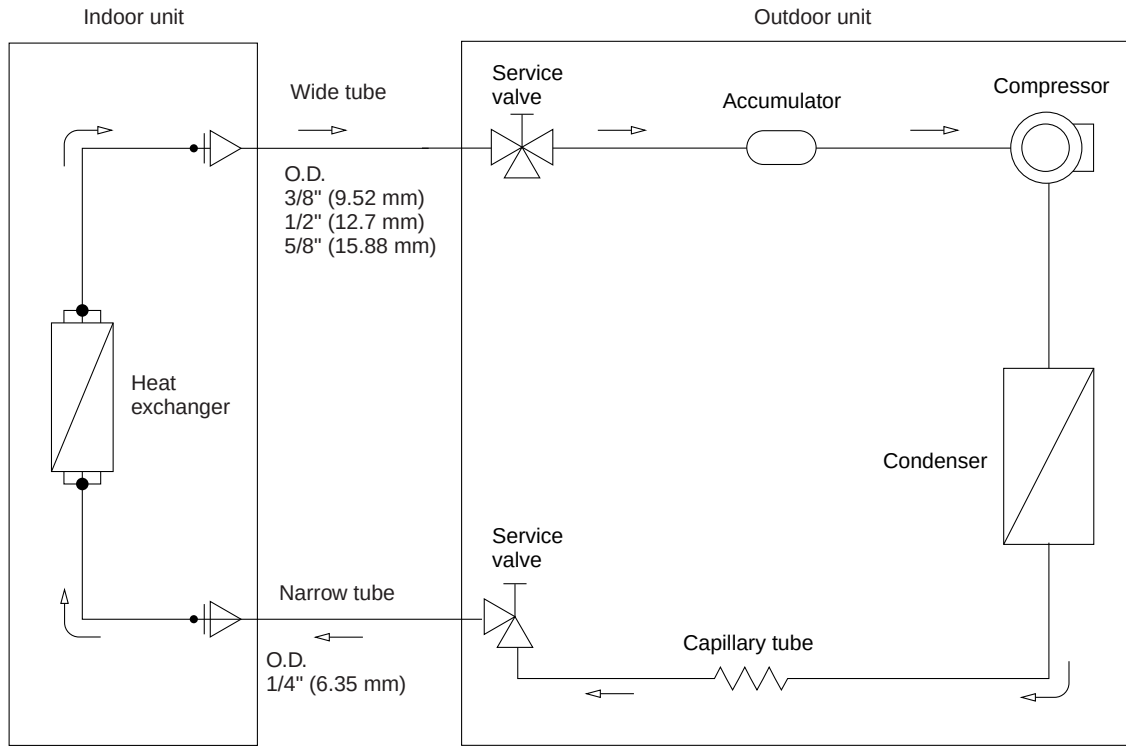
Unit: inch (mm)

4. REFRIGERANT FLOW DIAGRAM

4-1. Refrigerant Flow Diagram

Indoor unit **KS0951 / KS1251 / KS1852**
Outdoor unit **C0951 / CL0951 / C1251 / CL1251 / C1852 / CL1852**

COOLING CYCLE

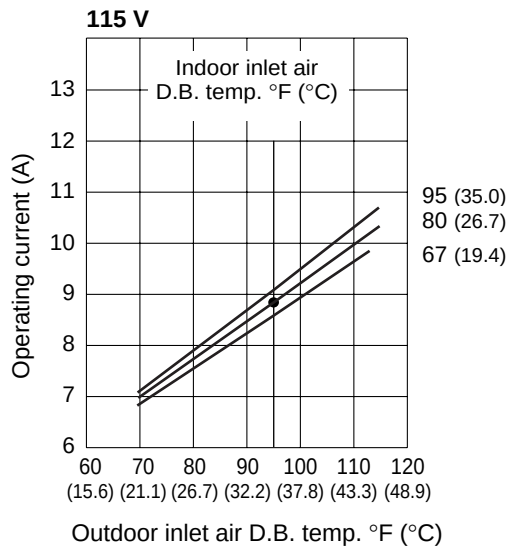


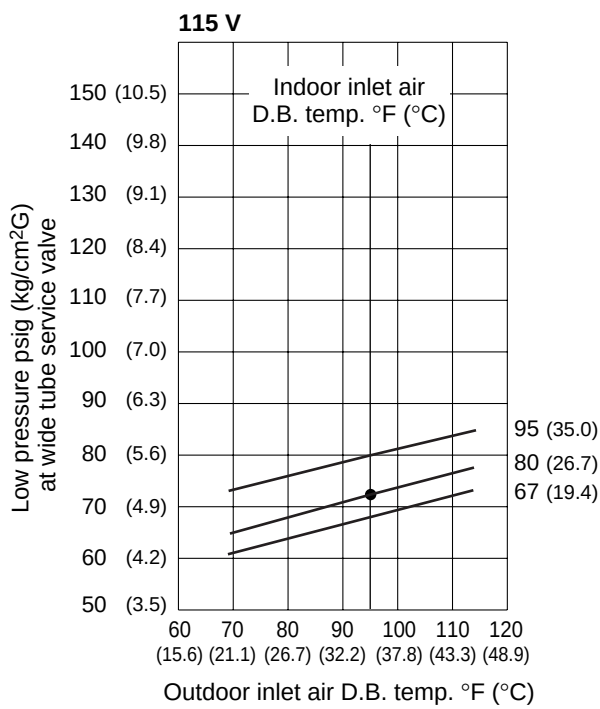
5. PERFORMANCE DATA

5-1. Performance Charts

(1) Indoor unit **KS0951**
Outdoor unit **C0951 / CL0951**

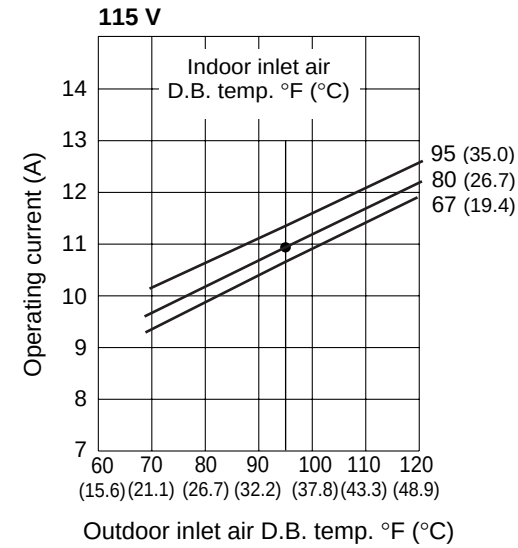
● **Cooling Characteristics**

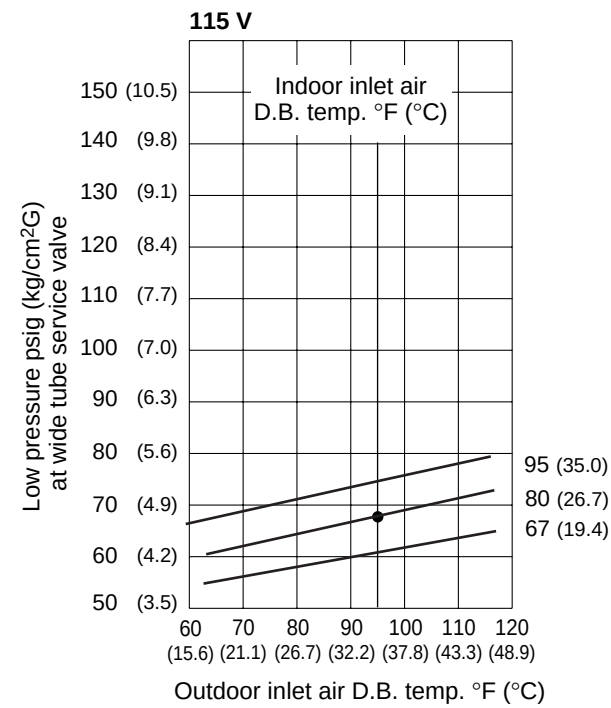




(2) Indoor unit **KS1251**
Outdoor unit **C1251 / CL1251**

● **Cooling Characteristics**



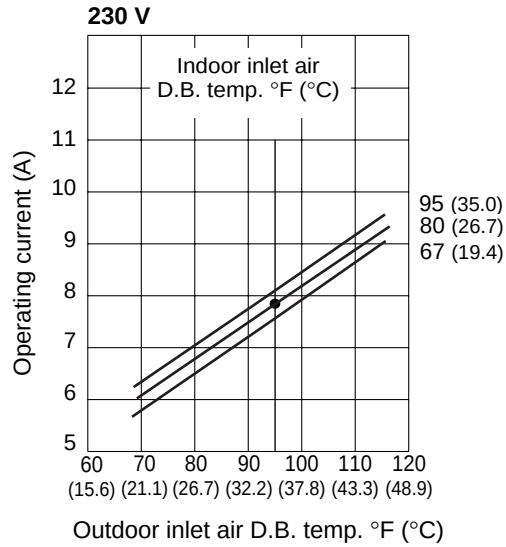


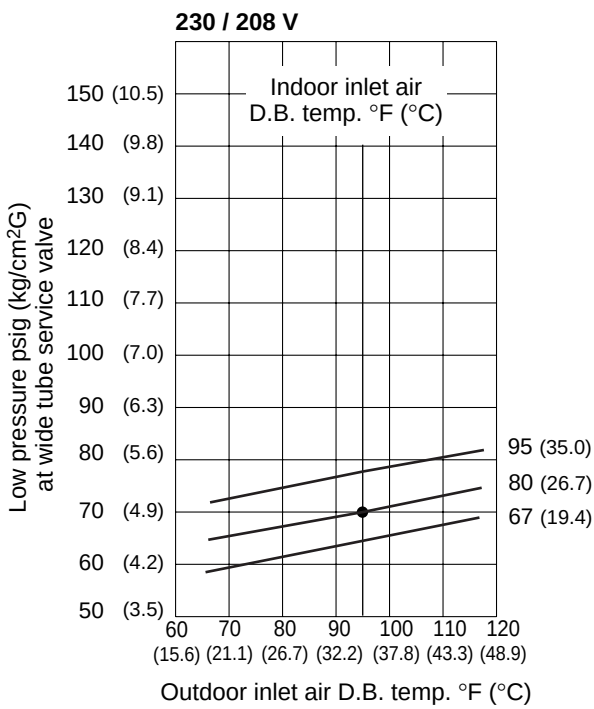
NOTE

● … Points of rating condition
Black dots in above charts indicate the following rating conditions.
Cooling: Indoor air temperature 80°F D.B. / 67°F W.B.
Outdoor air temperature 95°F D.B.

(3) Indoor unit **KS1852**
Outdoor unit **C1852 / CL1852**

● **Cooling Characteristics**





NOTE

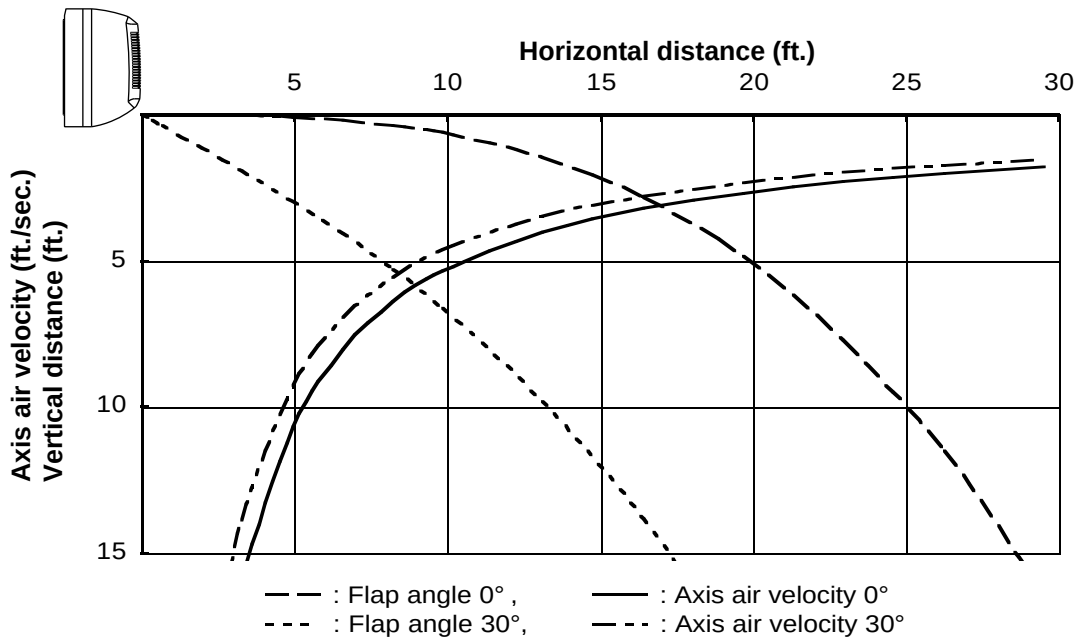
● … Points of rating condition
Black dots in above charts indicate the following rating conditions.
Cooling: Indoor air temperature 80°F D.B. / 67°F W.B.
Outdoor air temperature 95°F D.B.

5-2. Air Throw Distance Charts

(1) Indoor unit **KS0951**

Cooling

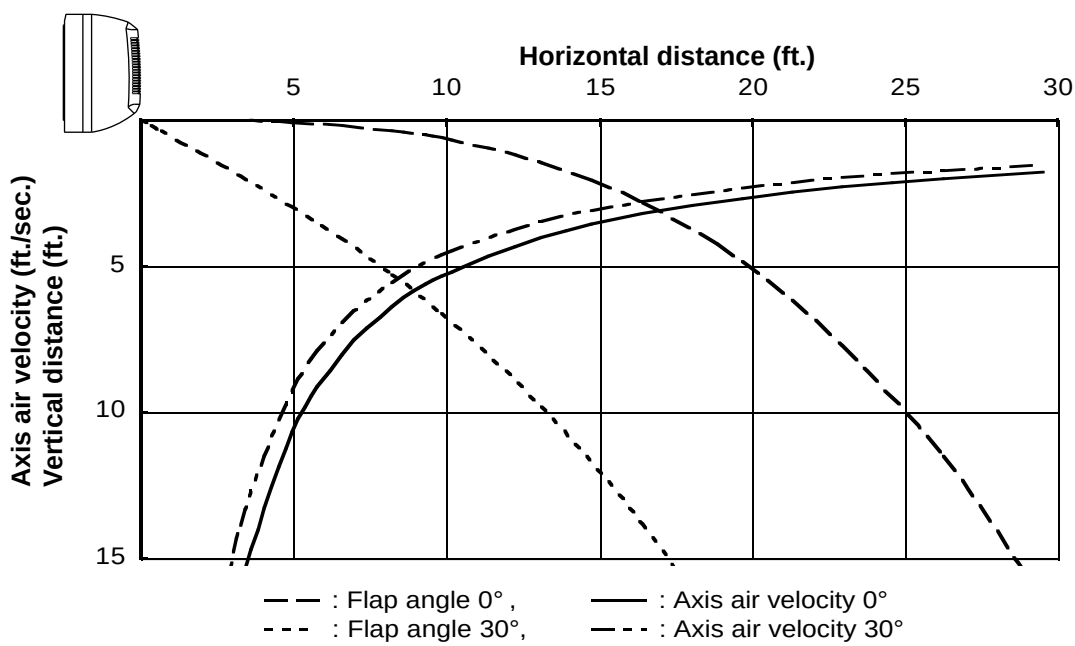
Room air temp.: 80°F (26.7°C)
Fan speed: High



(2) Indoor unit **KS1251**

Cooling

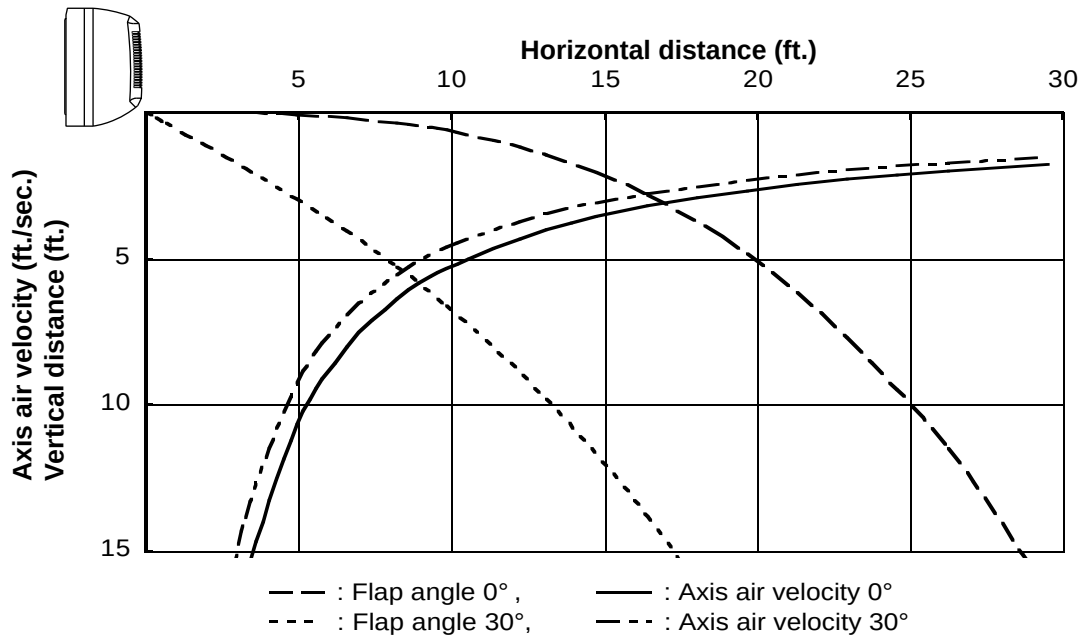
Room air temp.: 80°F (26.7°C)
Fan speed: High



(3) Indoor unit **KS1852**

Cooling

Room air temp.: 80°F (26.7°C)
Fan speed: High



5-3. Cooling Capacity

(1) Indoor unit **KS0951**
Outdoor unit **C0951 / CL0951**

115V single-phase 60Hz

Rating Capacity: 9,000 BTU/h		**Air Flow Rate: 270 CFM**					
Evaporator		**Condenser**					
Ent. Temp. °F (°C)		**Ambient Temp. °F (°C)**					
WB	DB		75 (23.9)	85 (29.4)	95 (35.0)	105 (40.6)	115 (46.1)
		TC	9,120	8,680	8,170	7,610	6,980
		CI	0.65	0.71	0.77	0.83	0.92
59	72 (22.2)	SHC	6,670	6,450	6,190	5,920	5,620
(15.0)	76 (24.4)	SHC	7,530	7,300	7,050	6,780	6,480
	80 (26.7)	SHC	8,420	8,200	7,940	7,610	6,980
	84 (28.9)	SHC	9,120	8,680	8,170	7,610	6,980
	88 (31.1)	SHC	9,120	8,680	8,170	7,610	6,980
		TC	9,460	9,040	8,590	8,070	7,520
		CI	0.65	0.72	0.78	0.85	0.94
63	72 (22.2)	SHC	5,620	5,420	5,220	4,980	4,740
(17.2)	76 (24.4)	SHC	6,480	6,280	6,070	5,840	5,600
	80 (26.7)	SHC	7,370	7,180	6,970	6,740	6,490
	84 (28.9)	SHC	8,230	8,030	7,830	7,590	7,350
	88 (31.1)	SHC	9,080	8,890	8,590	8,070	7,520
		TC	9,820	9,430	#9,000	8,520	8,000
		CI	0.66	0.72	0.79	0.86	0.96
67	72 (22.2)	SHC	4,560	4,400	4,220	4,020	3,810
(19.4)	76 (24.4)	SHC	5,420	5,250	5,070	4,880	4,670
	80 (26.7)	SHC	6,320	6,150	5,970	5,770	5,560
	84 (28.9)	SHC	7,170	7,010	6,830	6,630	6,420
	88 (31.1)	SHC	8,030	7,860	7,680	7,480	7,270
		TC	10,340	9,980	9,590	9,170	8,700
		CI	0.67	0.73	0.8	0.88	0.98
71	72 (22.2)	SHC	3,520	3,380	3,230	3,070	2,890
(21.7)	76 (24.4)	SHC	4,370	4,230	4,080	3,920	3,750
	80 (26.7)	SHC	5,270	5,130	4,980	4,820	4,640
	84 (28.9)	SHC	6,120	5,980	5,830	5,680	5,500
	88 (31.1)	SHC	6,980	6,840	6,690	6,530	6,360
		TC	10,550	10,210	9,850	9,430	8,990
		CI	0.68	0.74	0.81	0.9	1
75	76 (24.4)	SHC	3,240	3,120	3,000	2,850	2,710
(23.9)	80 (26.7)	SHC	4,140	4,020	3,890	3,750	3,600
	84 (28.9)	SHC	4,990	4,870	4,750	4,610	4,460
	88 (31.1)	SHC	5,850	5,730	5,610	5,460	5,310

TC : Total cooling capacity (BTU/h)
SHC : Sensible heat capacity (BTU/h)
CI : Compressor input (kW)

Rating conditions (# mark) are: Outdoor ambient temperature 95°F (35°C) D.B.
Indoor unit entering air temperature 80°F (26.7°C) D.B./67°F (19.4°C) W.B.

(2) Indoor unit **KS1251**
Outdoor unit **C1251 / CL1251**

115V single-phase 60Hz

Rating Capacity: 11,800 BTU/h		**Air Flow Rate: 300 CFM**					
Evaporator		**Condenser**					
Ent. Temp. °F (°C)		**Ambient Temp. °F (°C)**					
WB	DB		75 (23.9)	85 (29.4)	95 (35.0)	105 (40.6)	115 (46.1)
		TC	11,950	11,380	10,710	9,970	9,150
		CI	0.89	0.98	1.06	1.15	1.26
59	72 (22.2)	SHC	8,500	8,190	7,850	7,470	7,070
(15.0)	76 (24.4)	SHC	9,500	9,200	8,850	8,480	8,080
	80 (26.7)	SHC	10,550	10,250	9,910	9,530	9,130
	84 (28.9)	SHC	11,560	11,260	10,710	9,970	9,150
	88 (31.1)	SHC	11,560	11,380	10,710	9,970	9,150
		TC	12,400	11,850	11,260	10,580	9,850
		CI	0.9	0.99	1.08	1.17	1.29
63	72 (22.2)	SHC	7,230	6,960	6,680	6,370	6,030
(17.2)	76 (24.4)	SHC	8,240	7,970	7,690	7,370	7,040
	80 (26.7)	SHC	9,290	9,020	8,740	8,430	8,090
	84 (28.9)	SHC	10,300	10,030	9,750	9,430	9,100
	88 (31.1)	SHC	11,310	11,040	10,760	10,440	9,850
		TC	12,870	12,300	#11,800	11,170	10,490
		CI	0.91	1	1.09	1.19	1.32
67	72 (22.2)	SHC	5,960	5,740	5,490	5,220	4,930
(19.4)	76 (24.4)	SHC	6,970	6,740	6,500	6,230	5,940
	80 (26.7)	SHC	8,020	7,800	7,550	7,280	6,990
	84 (28.9)	SHC	9,030	8,800	8,560	8,290	8,000
	88 (31.1)	SHC	10,030	9,810	9,560	9,290	9,010
		TC	13,560	13,090	12,580	12,020	11,410
		CI	0.92	1.01	1.11	1.22	1.35
71	72 (22.2)	SHC	4,710	4,510	4,310	4,090	3,860
(21.7)	76 (24.4)	SHC	5,710	5,520	5,320	5,100	4,860
	80 (26.7)	SHC	6,770	6,570	6,370	6,150	5,920
	84 (28.9)	SHC	7,770	7,580	7,380	7,160	6,920
	88 (31.1)	SHC	8,780	8,590	8,390	8,170	7,930
		TC	13,830	13,380	12,910	12,370	11,790
		CI	0.94	1.02	1.12	1.25	1.38
75	76 (24.4)	SHC	4,330	4,170	4,000	3,810	3,610
(23.9)	80 (26.7)	SHC	5,390	5,220	5,060	4,860	4,660
	84 (28.9)	SHC	6,390	6,230	6,060	5,870	5,670
	88 (31.1)	SHC	7,400	7,240	7,070	6,880	6,680

TC : Total cooling capacity (BTU/h)
SHC : Sensible heat capacity (BTU/h)
CI : Compressor input (kW)

Rating conditions (# mark) are: Outdoor ambient temperature 95°F (35°C) D.B.
Indoor unit entering air temperature 80°F (26.7°C) D.B./67°F (19.4°C) W.B.

(3) Indoor unit **KS1852**
Outdoor unit **C1852 / CL1852**

208V single-phase 60Hz

Rating Capacity: 16,500 BTU/h		**Air Flow Rate: 394 CFM**					
Evaporator		**Condenser**					
Ent. Temp. °F (°C)		**Ambient Temp. °F (°C)**					
WB	DB		75 (23.9)	85 (29.4)	95 (35.0)	105 (40.6)	115 (46.1)
		TC	16,710	15,910	14,980	13,940	12,790
		CI	1.25	1.37	1.49	1.61	1.77
59	72 (22.2)	SHC	11,490	11,040	10,520	9,970	9,370
(15.0)	76 (24.4)	SHC	12,700	12,240	11,730	11,170	10,570
	80 (26.7)	SHC	13,960	13,500	12,990	12,430	11,830
	84 (28.9)	SHC	15,160	14,710	14,190	13,630	12,790
	88 (31.1)	SHC	16,370	15,910	14,980	13,940	12,790
		TC	17,340	16,570	15,740	14,800	13,780
		CI	1.27	1.39	1.51	1.64	1.81
63	72 (22.2)	SHC	9,920	9,520	9,090	8,630	8,130
(17.2)	76 (24.4)	SHC	11,120	10,720	10,300	9,830	9,340
	80 (26.7)	SHC	12,380	11,980	11,560	11,090	10,600
	84 (28.9)	SHC	13,590	13,180	12,760	12,290	11,800
	88 (31.1)	SHC	14,790	14,390	13,970	13,500	13,010
		TC	18,000	17,290	#16,500	15,630	14,670
		CI	1.28	1.4	1.53	1.67	1.85
67	72 (22.2)	SHC	8,330	7,990	7,620	7,230	6,800
(19.4)	76 (24.4)	SHC	9,540	9,200	8,830	8,430	8,000
	80 (26.7)	SHC	10,790	10,460	10,090	9,690	9,260
	84 (28.9)	SHC	12,000	11,660	11,290	10,890	10,470
	88 (31.1)	SHC	13,200	12,860	12,500	12,100	11,670
		TC	18,960	18,300	17,590	16,810	15,960
		CI	1.29	1.42	1.55	1.71	1.89
71	72 (22.2)	SHC	6,780	6,490	6,190	5,860	5,510
(21.7)	76 (24.4)	SHC	7,980	7,700	7,390	7,070	6,720
	80 (26.7)	SHC	9,240	8,960	8,650	8,330	7,980
	84 (28.9)	SHC	10,450	10,160	9,860	9,530	9,180
	88 (31.1)	SHC	11,650	11,360	11,060	10,730	10,390
		TC	19,340	18,710	18,050	17,290	16,480
		CI	1.32	1.44	1.58	1.75	1.94
75	76 (24.4)	SHC	6,240	5,990	5,740	5,450	5,150
(23.9)	80 (26.7)	SHC	7,500	7,250	7,000	6,710	6,410
	84 (28.9)	SHC	8,700	8,460	8,200	7,920	7,620
	88 (31.1)	SHC	9,910	9,660	9,410	9,120	8,820

TC : Total cooling capacity (BTU/h)
SHC : Sensible heat capacity (BTU/h)
CI : Compressor input (kW)

Rating conditions (# mark) are: Outdoor ambient temperature 95°F (35°C) D.B.
Indoor unit entering air temperature 80°F (26.7°C) D.B./67°F (19.4°C) W.B.

(4) Indoor unit **KS1852**
Outdoor unit **C1852 / CL1852**

230V single-phase 60Hz

Rating Capacity: 17,000 BTU/h		**Air Flow Rate: 394 CFM**					
Evaporator		**Condenser**					
Ent. Temp. °F (°C)		**Ambient Temp. °F (°C)**					
WB	DB		75 (23.9)	85 (29.4)	95 (35.0)	105 (40.6)	115 (46.1)
		TC	17,220	16,390	15,440	14,370	13,180
		CI	1.28	1.4	1.52	1.65	1.81
59	72 (22.2)	SHC	11,790	11,310	10,770	10,190	9,570
(15.0)	76 (24.4)	SHC	12,990	12,510	11,980	11,400	10,770
	80 (26.7)	SHC	14,250	13,770	13,240	12,660	12,030
	84 (28.9)	SHC	15,460	14,980	14,440	13,860	13,180
	88 (31.1)	SHC	16,660	16,180	15,440	14,370	13,180
		TC	17,870	17,070	16,220	15,250	14,200
		CI	1.29	1.42	1.54	1.68	1.85
63	72 (22.2)	SHC	10,200	9,770	9,330	8,850	8,330
(17.2)	76 (24.4)	SHC	11,400	10,980	10,540	10,050	9,540
	80 (26.7)	SHC	12,660	12,240	11,800	11,310	10,800
	84 (28.9)	SHC	13,870	13,440	13,000	12,510	12,000
	88 (31.1)	SHC	15,070	14,650	14,210	13,720	13,200
		TC	18,550	17,820	#17,000	16,100	15,110
		CI	1.3	1.43	1.56	1.7	1.89
67	72 (22.2)	SHC	8,590	8,240	7,850	7,440	6,990
(19.4)	76 (24.4)	SHC	9,800	9,450	9,060	8,640	8,190
	80 (26.7)	SHC	11,060	10,700	10,320	9,900	9,450
	84 (28.9)	SHC	12,260	11,910	11,520	11,100	10,660
	88 (31.1)	SHC	13,470	13,110	12,720	12,310	11,860
		TC	19,530	18,850	18,120	17,320	16,440
		CI	1.32	1.44	1.58	1.75	1.93
71	72 (22.2)	SHC	7,030	6,730	6,410	6,070	5,710
(21.7)	76 (24.4)	SHC	8,230	7,930	7,620	7,280	6,910
	80 (26.7)	SHC	9,490	9,190	8,870	8,530	8,170
	84 (28.9)	SHC	10,700	10,400	10,080	9,740	9,370
	88 (31.1)	SHC	11,900	11,600	11,280	10,940	10,580
		TC	19,920	19,280	18,600	17,820	16,980
		CI	1.34	1.47	1.61	1.79	1.97
75	76 (24.4)	SHC	6,460	6,210	5,950	5,650	5,330
(23.9)	80 (26.7)	SHC	7,720	7,470	7,200	6,910	6,590
	84 (28.9)	SHC	8,930	8,670	8,410	8,110	7,800
	88 (31.1)	SHC	10,130	9,880	9,610	9,320	9,000

TC : Total cooling capacity (BTU/h)
SHC : Sensible heat capacity (BTU/h)
CI : Compressor input (kW)

Rating conditions (# mark) are: Outdoor ambient temperature 95°F (35°C) D.B.
Indoor unit entering air temperature 80°F (26.7°C) D.B./67°F (19.4°C) W.B.

6. ELECTRICAL DATA

6-1. Electrical Characteristics

Cooling

(1) Indoor unit **KS0951**
Outdoor unit **C0951 / CL0951**

115V single-phase 60Hz

			Indoor Unit	Outdoor Unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
Performance at			115V single-phase 60Hz			
Rating conditions	Running amp.	A	0.40	0.655	7.7	8.8
	Power input	kW	0.034	0.075	0.79	0.90
Full load conditions	Running amp.	A	0.4	0.655	9.4	10.5
	Power input	kW	0.034	0.075	1.04	1.15

Rating conditions: Indoor air temperature 80°F (26.7°C) D.B. / 67°F (19.4°C) W.B.
Outdoor air temperature 95°F (35°C) D.B.
Full load conditions: Indoor air temperature 95°F (35°C) D.B. / 70°F (21.2°C) W.B.
Outdoor air temperature 115°F (46.1°C) D.B.

(2) Indoor unit **KS1251**
Outdoor unit **C1251 / CL1251**

115V single-phase 60Hz

			Indoor Unit	Outdoor Unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
Performance at			115V single-phase 60Hz			
Rating conditions	Running amp.	A	0.40	0.704	9.8	10.9
	Power input	kW	0.034	0.081	1.09	1.20
Full load conditions	Running amp.	A	0.4	0.704	12.2	13.3
	Power input	kW	0.034	0.081	1.41	1.52

Rating conditions: Indoor air temperature 80°F (26.7°C) D.B. / 67°F (19.4°C) W.B.
Outdoor air temperature 95°F (35°C) D.B.
Full load conditions: Indoor air temperature 95°F (35°C) D.B. / 70°F (21.2°C) W.B.
Outdoor air temperature 115°F (46.1°C) D.B.

(3) Indoor unit **KS1852**
Outdoor unit **C1852 / CL1852**

230 / 280V single-phase 60Hz

			Indoor Unit	Outdoor Unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
Performance at			230 / 208V single-phase 60Hz			
Rating conditions	Running amp.	A	0.25 / 0.23	0.498 / 0.465	7.1 / 7.7	7.8 / 8.4
	Power input	kW	0.047 / 0.045	0.113 / 0.095	1.56 / 1.53	1.72 / 1.67
Full load conditions	Running amp.	A	0.25 / 0.23	0.498 / 0.465	8.6 / 9.5	9.3 / 10.2
	Power input	kW	0.047 / 0.040	0.113 / 0.095	1.93 / 1.96	2.09 / 2.10

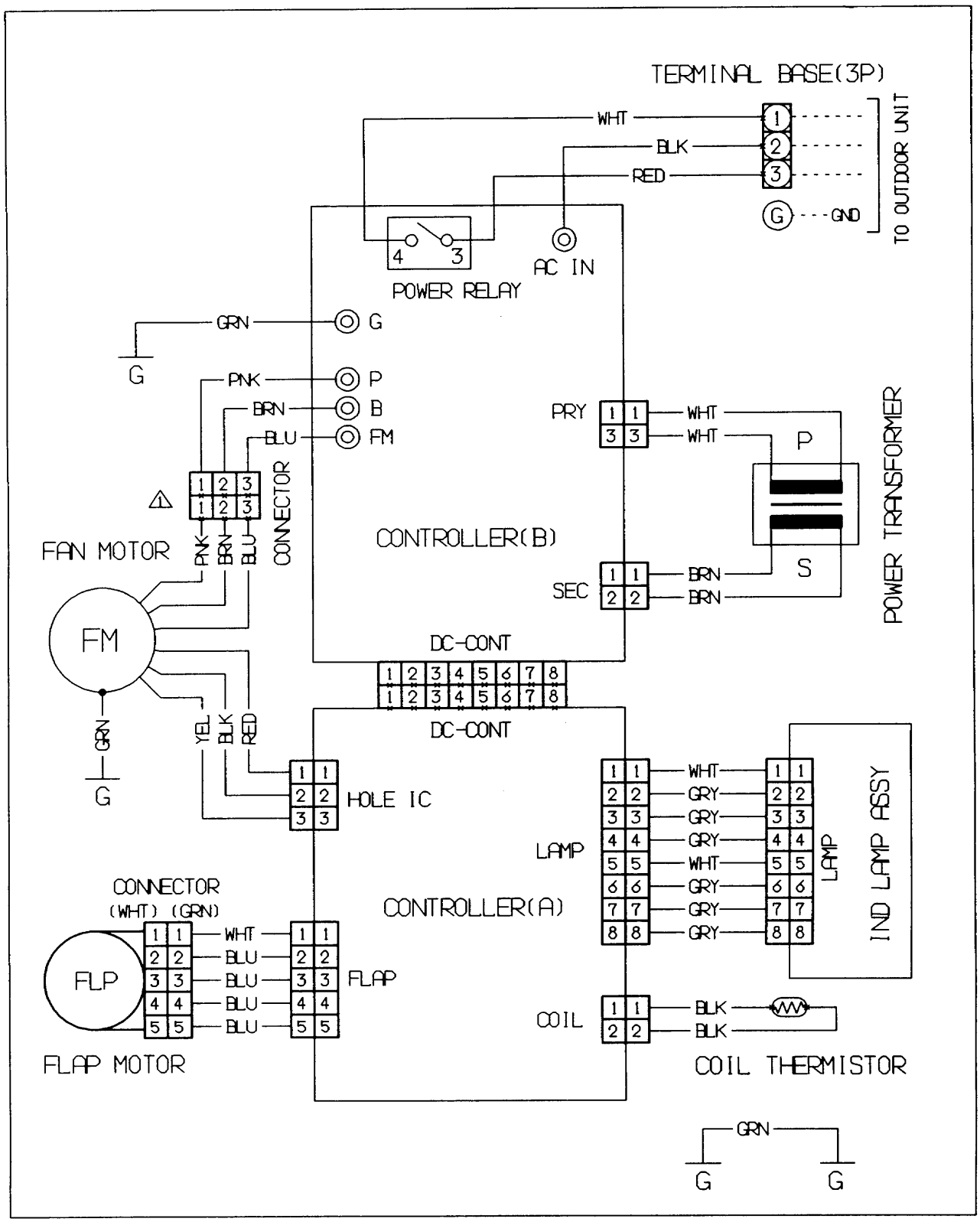
Rating conditions: Indoor air temperature 80°F (26.7°C) D.B. / 67°F (19.4°C) W.B.
Outdoor air temperature 95°F (35°C) D.B.
Full load conditions: Indoor air temperature 95°F (35°C) D.B. / 70°F (21.2°C) W.B.
Outdoor air temperature 115°F (46.1°C) D.B.

6-2. Electric Wiring Diagrams

(1) Indoor unit **KS0951 / KS1251**

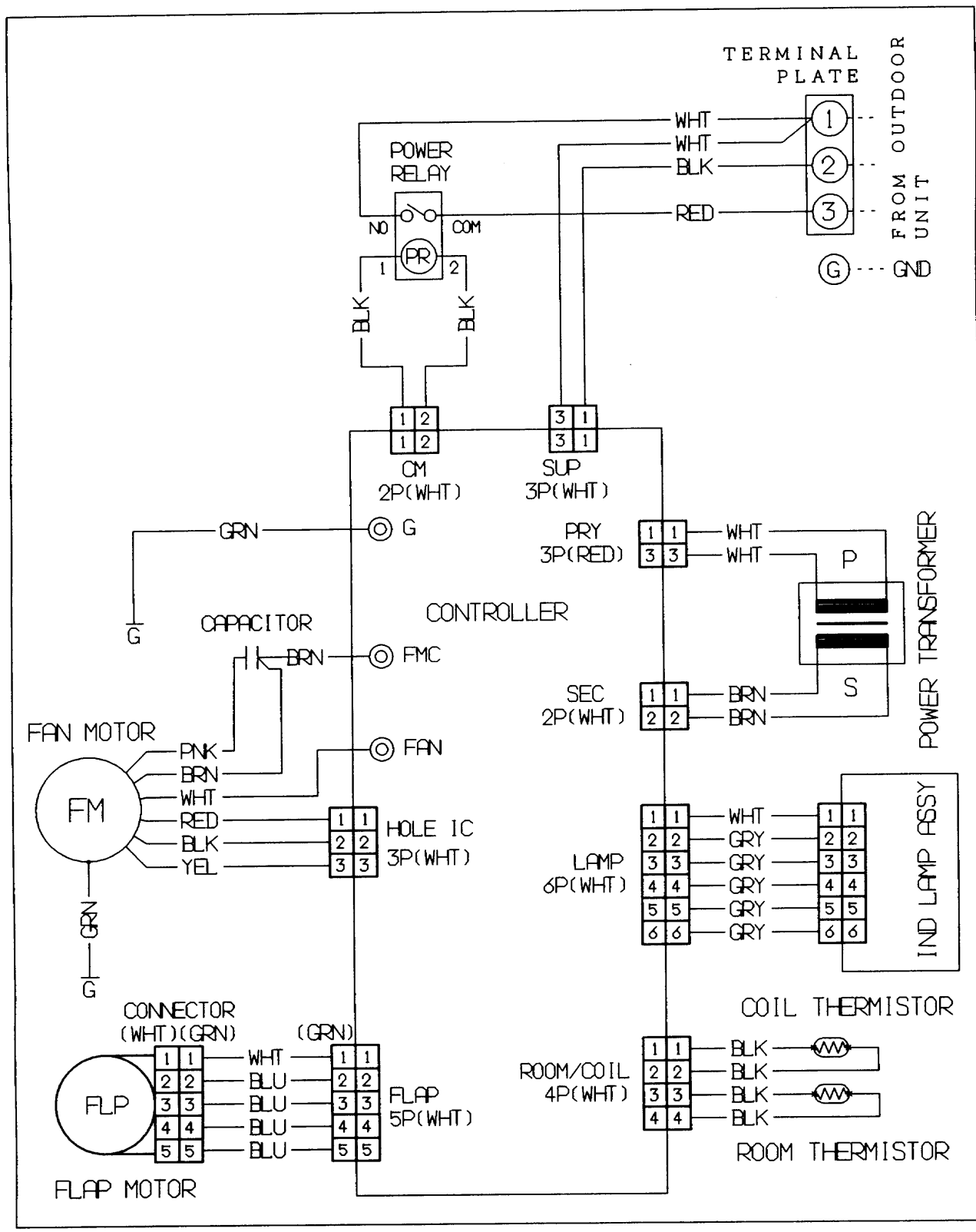
WARNING

To avoid electrical shock hazard, be sure to disconnect power before checking, servicing and/or cleaning any electrical parts.



WARNING

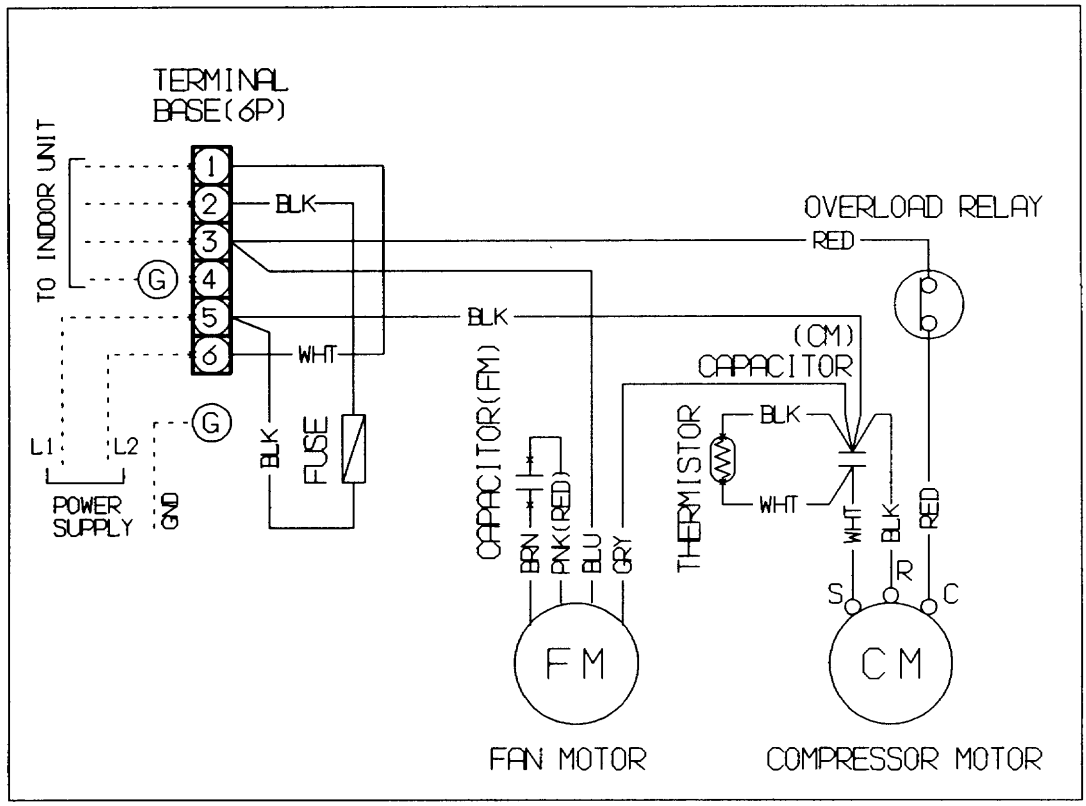
To avoid electrical shock hazard, be sure to disconnect power before checking, servicing and/or cleaning any electrical parts.



(3) Outdoor unit **C0951 / C1251**

WARNING

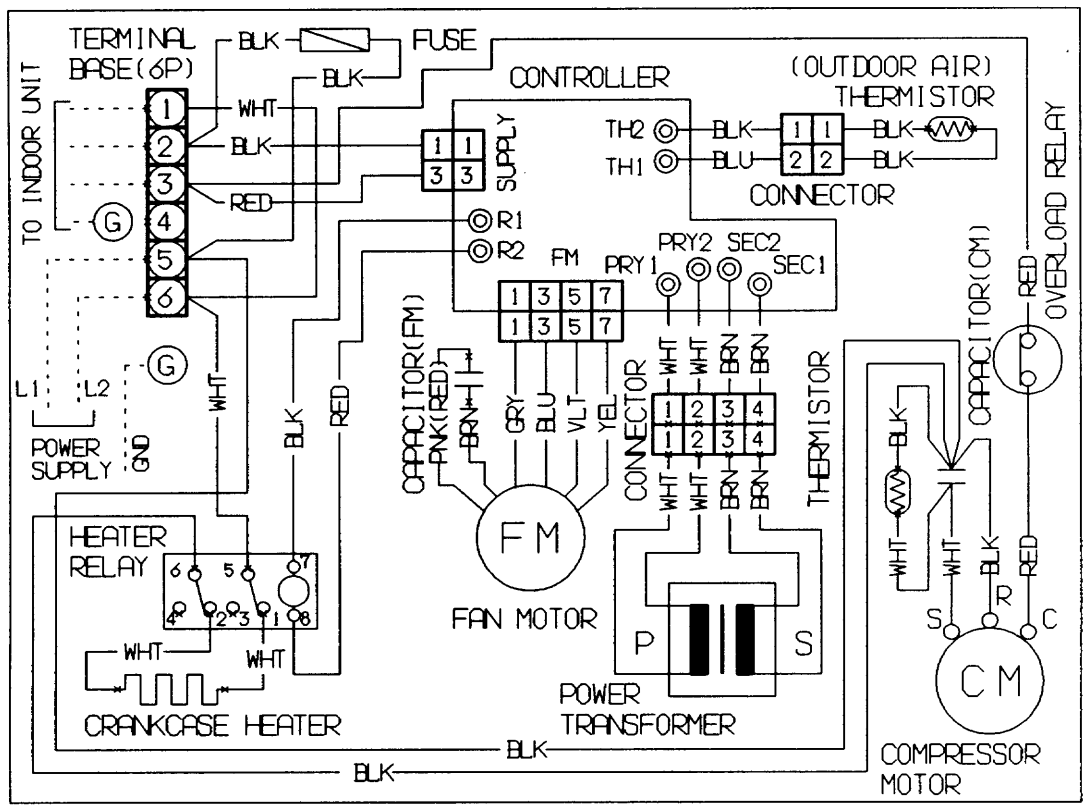
To avoid electrical shock hazard, be sure to disconnect power before checking, servicing and/or cleaning any electrical parts.



(4) Outdoor unit **CL0951 / CL1251**

WARNING

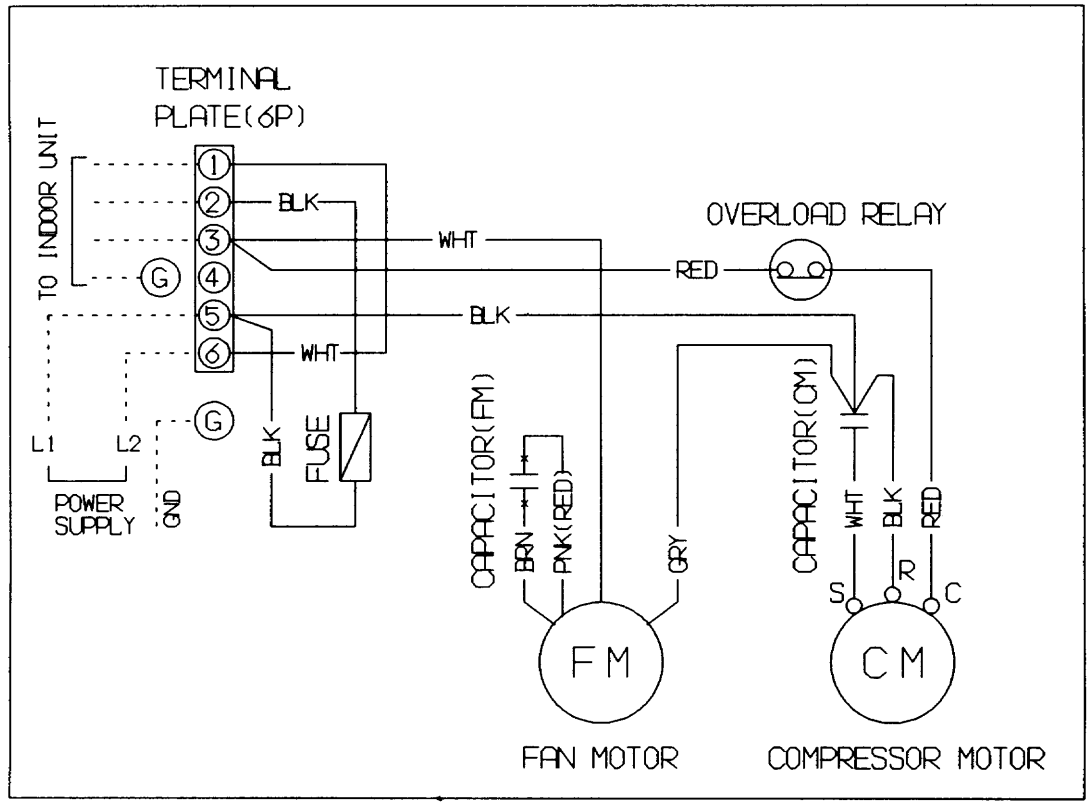
To avoid electrical shock hazard, be sure to disconnect power before checking, servicing and/or cleaning any electrical parts.



(5) Outdoor unit **C1852**

WARNING

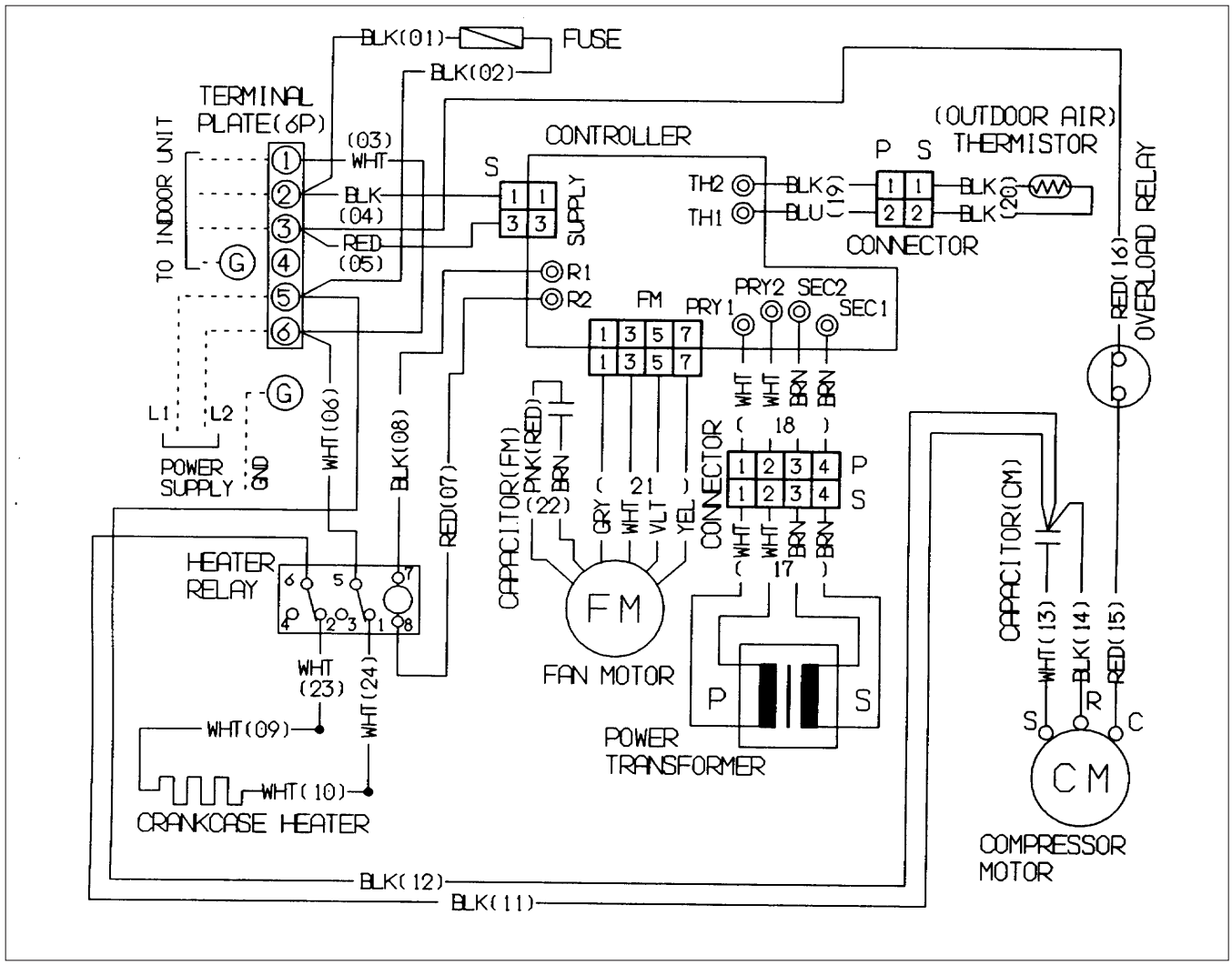
To avoid electrical shock hazard, be sure to disconnect power before checking, servicing and/or cleaning any electrical parts.



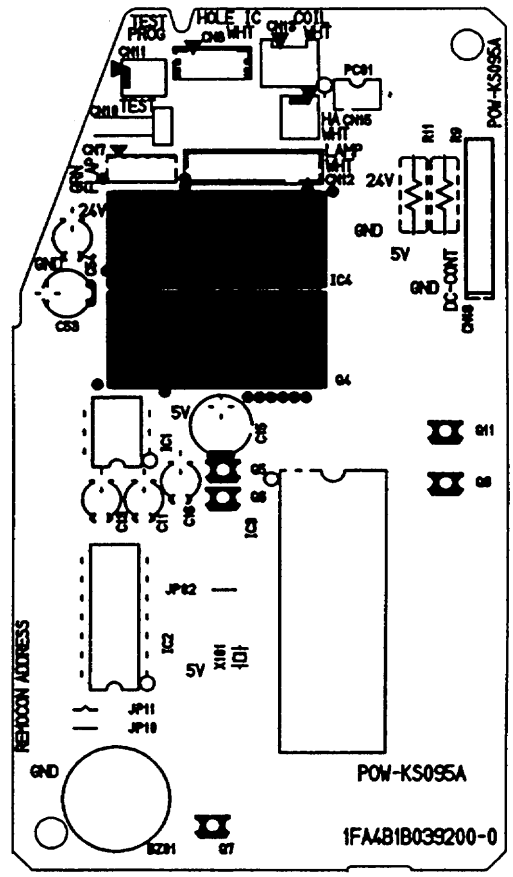
(6) Outdoor unit **CL1852**

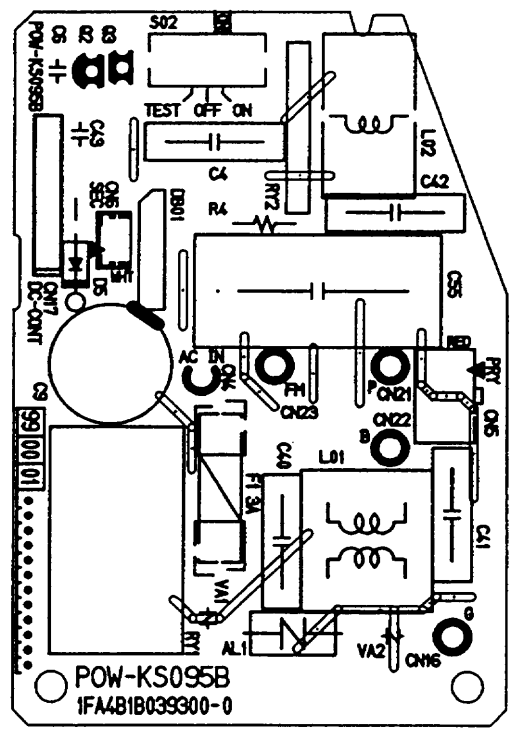
WARNING

To avoid electrical shock hazard, be sure to disconnect power before checking, servicing and/or cleaning any electrical parts.

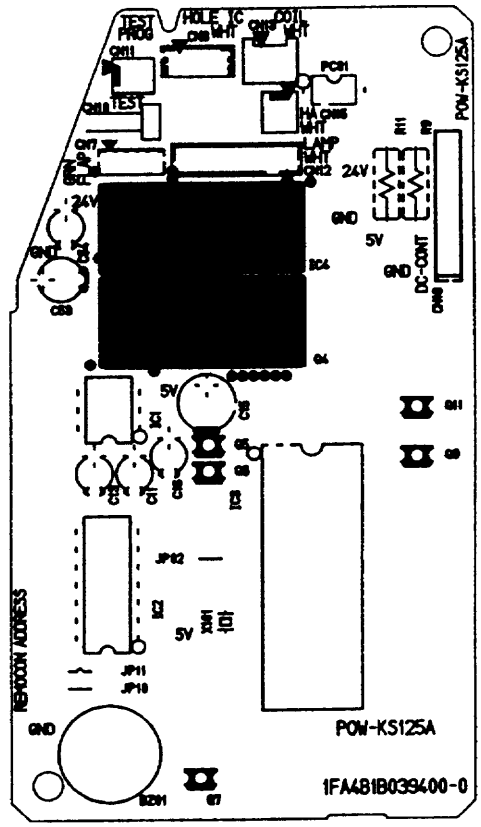


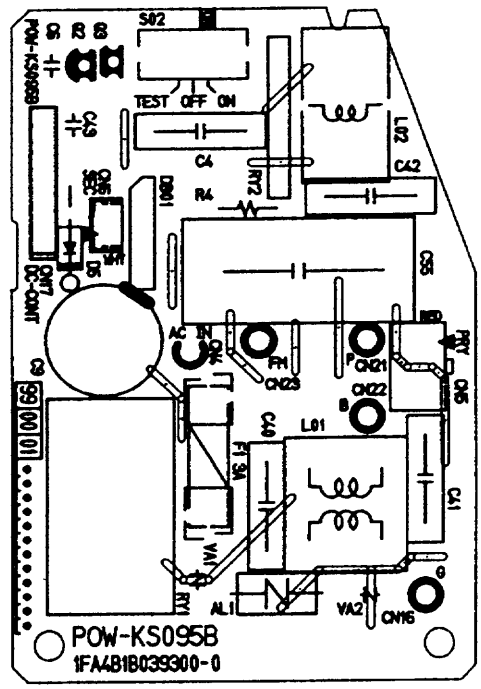
(7) Printed circuit board **POW-KS095A, POW-KS095B (for KS0951)**



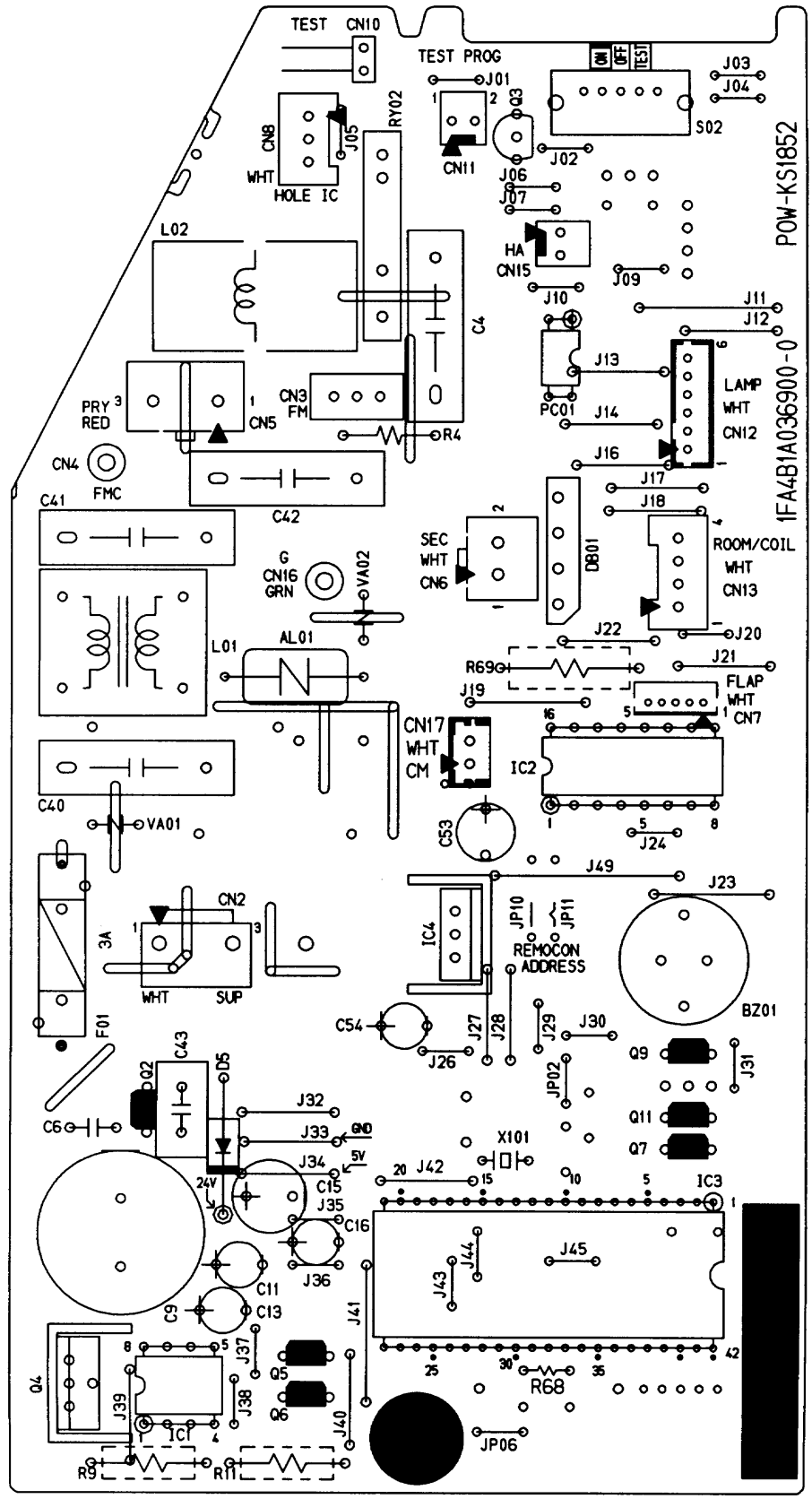


(8) Printed circuit board **POW-KS125A / POW-KS095B (for KS1251)**

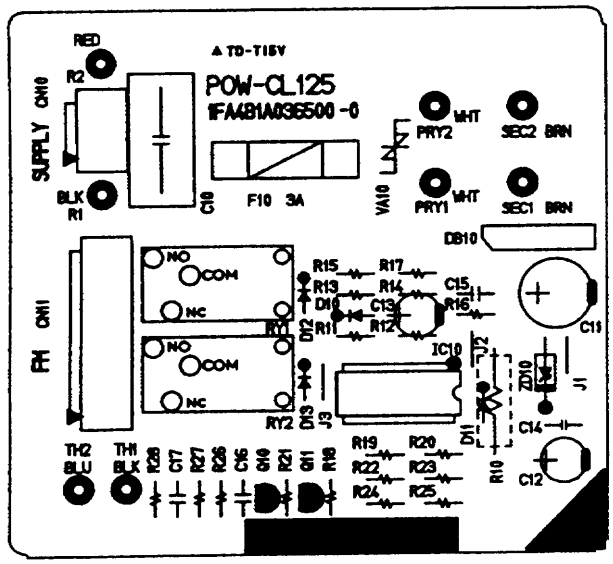




(9) Printed circuit board **POW-KS1852 (for KS1852)**



(10) Printed circuit board **POW-CL125 (for CL0951, CL1251 and CL1852)**



7. INSTALLATION INSTRUCTIONS

7-1. Installation Site Selection

7-1-1. Indoor Unit

WARNING

To prevent abnormal heat generation and the possibility of fire, do not place obstacles, enclosures and grilles in front of or surrounding the air conditioner in a way that may block air flow.

AVOID:

- direct sunlight.
- nearby heat sources that may affect performance of the unit.
- areas where leakage of flammable gas may be expected.
- places where large amounts of oil mist exist.

DO:

- select an appropriate position from which every corner of the room can be uniformly cooled. (High on a wall is best.)
- select a location that will hold the weight of the unit.
- select a location where tubing and drain hose have the shortest run to the outside. (Fig. 1)
- allow room for operation and maintenance as well as unrestricted air flow around the unit. (Fig. 2)
- install the unit within the maximum elevation difference (H) above the outdoor unit and within a total tubing length (L) from the outdoor unit as detailed in Table 1 and Fig. 3a.

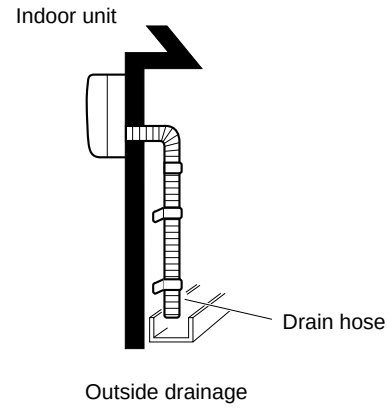


Fig. 1

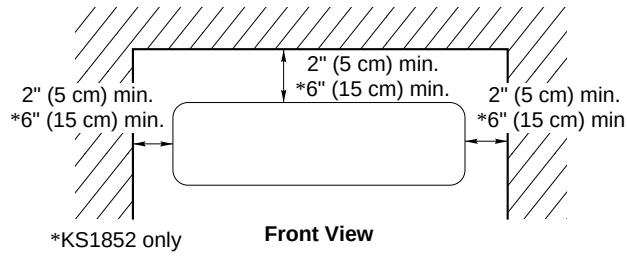


Fig. 2

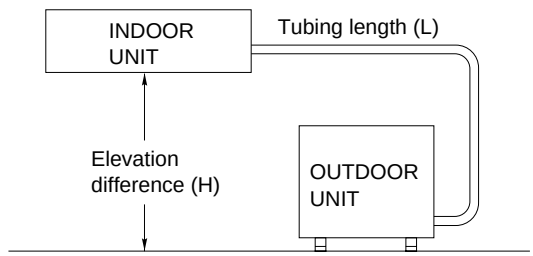


Fig. 3a

CAUTION

For stable operation of the air conditioner, do not install wall-mounted type indoor units less than 5 ft. (1.5 m) from floor level.

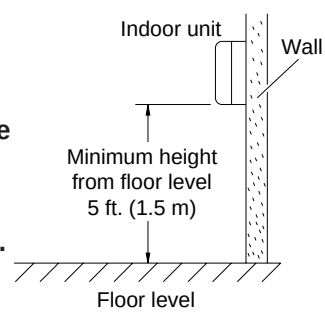


Fig. 3b

Table 1

Max. Allowable Tubing Length at Shipment (ft.)	Limit of Tubing Length (L) (ft.)	Limit of Elevation Difference (H) (ft.)	Required Amount of Additional Refrigerant (oz./ft.)*	Model
25	50	23	a) 0.16	9,000 BTU
25	65	23	b) 0.27	12,000/18,000 BTU

* If total tubing length becomes a) 25 to 50 ft. (max.), b) 25 to 65 ft. (max.) charge additional refrigerant (R22) by a) 0.16 oz./ft., b) 0.27 oz./ft. No additional compressor oil is necessary.

7-1-2. Outdoor Unit

AVOID:

- heat sources, exhaust fans, etc. (Fig. 4)
- damp, humid or uneven locations.

DO:

- choose a place as cool as possible.
- choose a place that is well ventilated.
- allow enough room around the unit for air intake/exhaust and possible maintenance. (Fig. 5a)

CAUTION

- **Install the outdoor unit above snowfall line.**
- **Do not place objects on or sit on the outdoor unit. Also, never block the air intake/outlet or exhaust. Distortion of the outdoor unit or incomplete combustion may result.**
- **Do not introduce foreign matter into the air intake/outlet or exhaust. Do not poke them with such objects as a stick.**

- provide a solid base (level concrete pad, concrete block, 4 in. × 16 in. (10 × 40 cm) beams or equal), a minimum of 4 in. (10 cm) above ground level to reduce humidity and protect the unit against possible water damage and decreased service life (Fig. 5b).
- use lug bolts or equal to bolt down unit, reducing vibration and noise.

7-1-3. Baffle Plate for the Outdoor Unit (CL×× models only)

NOTE

It is recommended to use baffle plates for models CL1251, CL1852 and CL0951. The baffle plates are not normally required for the other models.

When the outdoor unit is installed in a position exposed to strong wind (like seasonal winds with low air temperature in winter), baffle plates must be installed on the outdoor unit. (Fig. 5c)

This unit is designed so that the fan of the outdoor unit runs at low speed when the air conditioner is operated at low outdoor air temperatures. When the outdoor unit is exposed to strong wind, the system pressure drops because of the freeze protector.

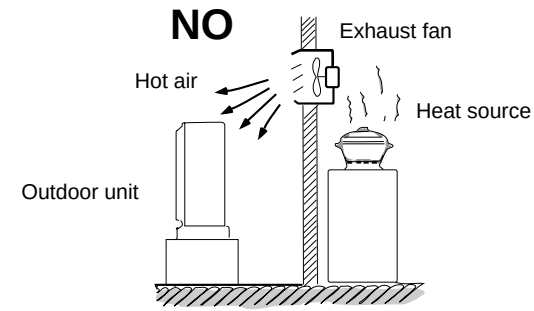


Fig. 4

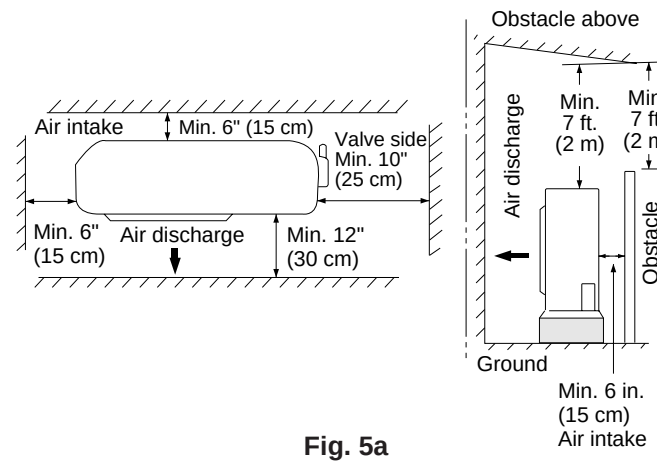


Fig. 5a

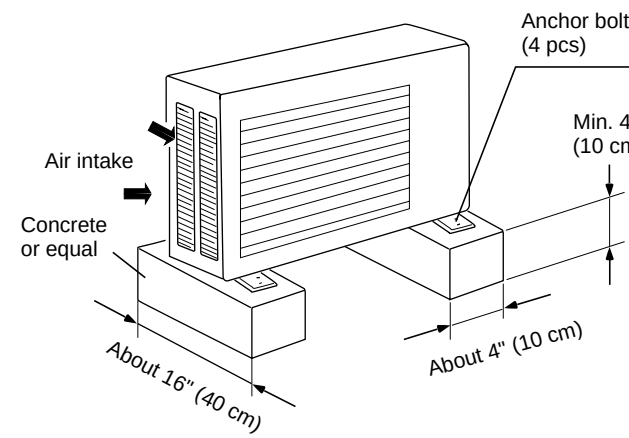


Fig. 5b

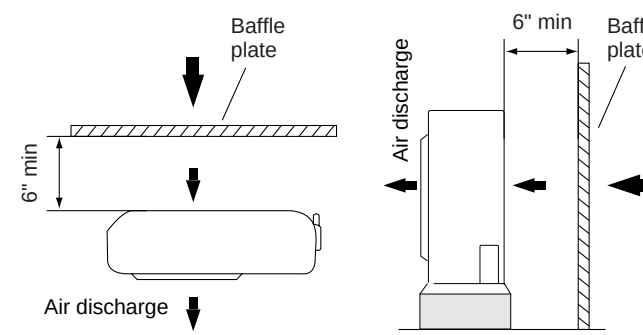


Fig. 5c

7-2. Remote Control Unit Installation Position

The remote control unit can be operated from either a non-fixed position or a wall-mounted position.

To ensure that the air conditioner operates correctly, do not install the remote control unit in the following places:

- In direct sunlight
- Behind a curtain or other place where it is covered
- More than 26 ft. (8 m) away from the air conditioner
- In the path of the air conditioner's airstream
- Where it may become extremely hot or cold
- Where it may be subject to electrical or magnetic interference

7-2-1. Mounting on a Wall

a) Removable mounting

1) Momentarily hold the remote control unit at the desired mounting position.

2) Confirm that the air conditioner responds correctly when you press keys on the remote control from that position.

3) After confirming correct operation, use a screwdriver to screw the supplied special mounting screw into the wall. (Fig. 6)

4) Hang the remote control unit from the mounting screw.

b) Non-removable mounting

1) Momentarily hold the remote control unit at the desired mounting position.

2) Confirm that the air conditioner responds correctly when you press keys on the remote control from that position.

3) After confirming correct operation, use a screwdriver to screw the mounting screw into the wall. (Fig. 6)

4) Remove the remote control cover by sliding it downward.

5) Remove the batteries of the remote control unit.

6) Use a screwdriver to screw the remote control unit securing screw into the wall through the hole in the battery compartment. (Fig. 7)

7) Replace the batteries.

8) Again confirm that the remote control unit operates correctly.

Removable mounting

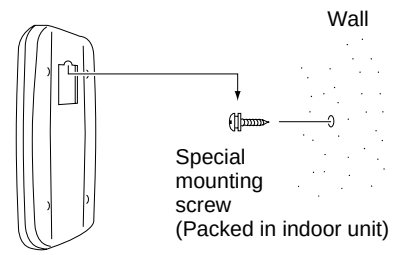


Fig. 6

Non-removable mounting

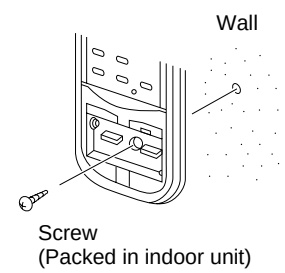


Fig. 7

7-3. Address Switches

If you are installing more than 1 indoor unit (up to 2) in the same room, it is necessary for you to assign each unit its own address so each can be operated by its own remote control unit. You assign the addresses by matching the switch positions of each indoor unit with the switch positions of its remote control unit. The switches of the remote control unit are shown in Fig. 8.

For instance, to set up 2 indoor units, switch Unit A's address switches. Then switch Unit B's address switches. *It is important that you match the switches of the air conditioner unit with the switches of its remote control unit.*

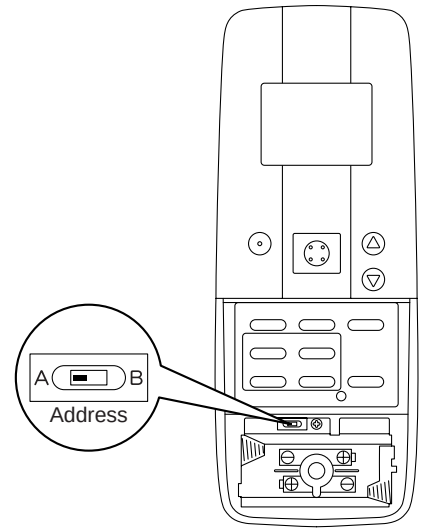
7-3-1. Finding the Address Switches

Remote Control Unit

Remove the lid and unit's 2 batteries. You can see the switches inside the battery compartment. (Fig. 8)

WARNING **Be sure to turn the air conditioner off and disconnect the power before opening the unit.**

Risk of Electric Shock



NOTE

Address switch is in "A" position at time of shipment.

Fig. 8

KS0951, KS1251

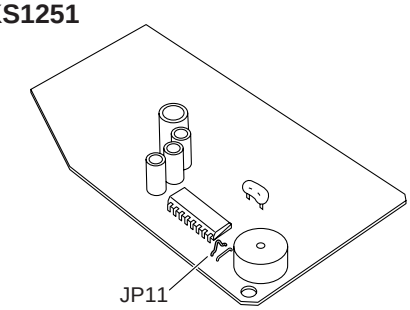


Fig. 9

KS1852

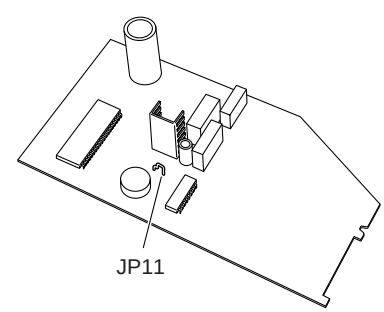


Fig. 10

7-3-2. Switch Positions for Up to 2 Units

Indoor Unit

Remove the casing, then follow the steps below.

a) Unscrew the cover plate of the electrical component box. Remove the PCB. Locate and cut the jumper wire. (Figs. 9 and 10)

b) Table 2 shows the positions you can use for up to 2 indoor units installed in the same room. (Figs. 8, 9 and 10)

Table 2

Unit No.	Remote Control Address	Indoor Unit Jumper Wire
		JP11
1	A	Do not cut
2	B	Cut

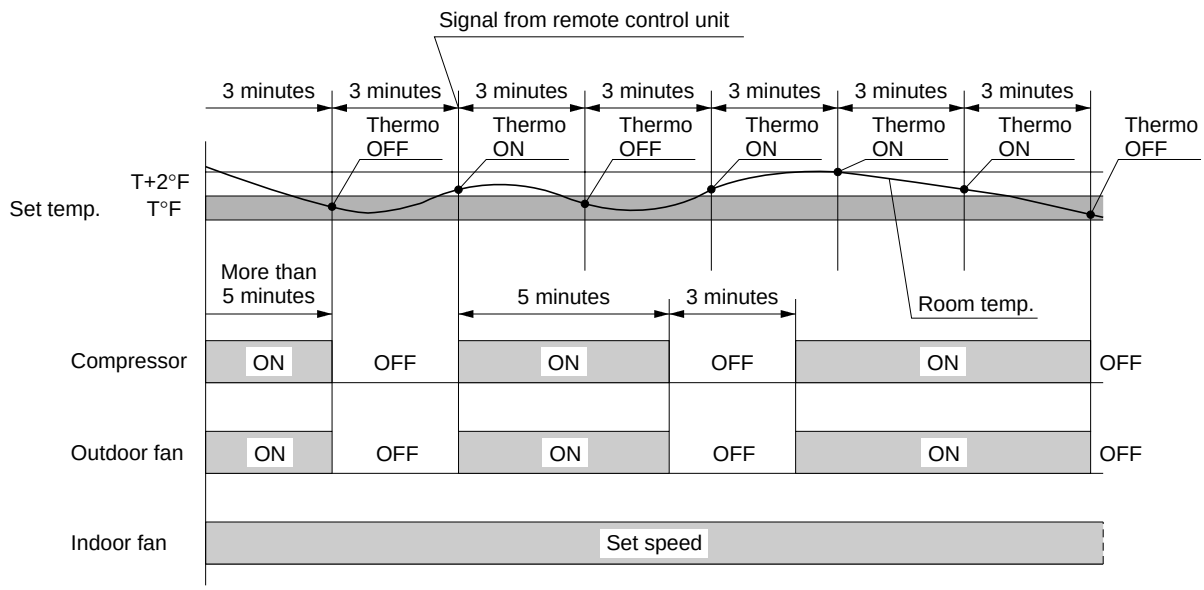
NOTE

An indoor unit cannot be remote controlled if its remote control unit is too far away (more than 26 ft.). If the remote control unit does not seem to work correctly, bring it closer to the unit being operated and try again. For this reason, if the remote control unit is to be used from a fixed position, operation should be checked at that position before mounting.

8. FUNCTION

8-1. Room Temperature Control

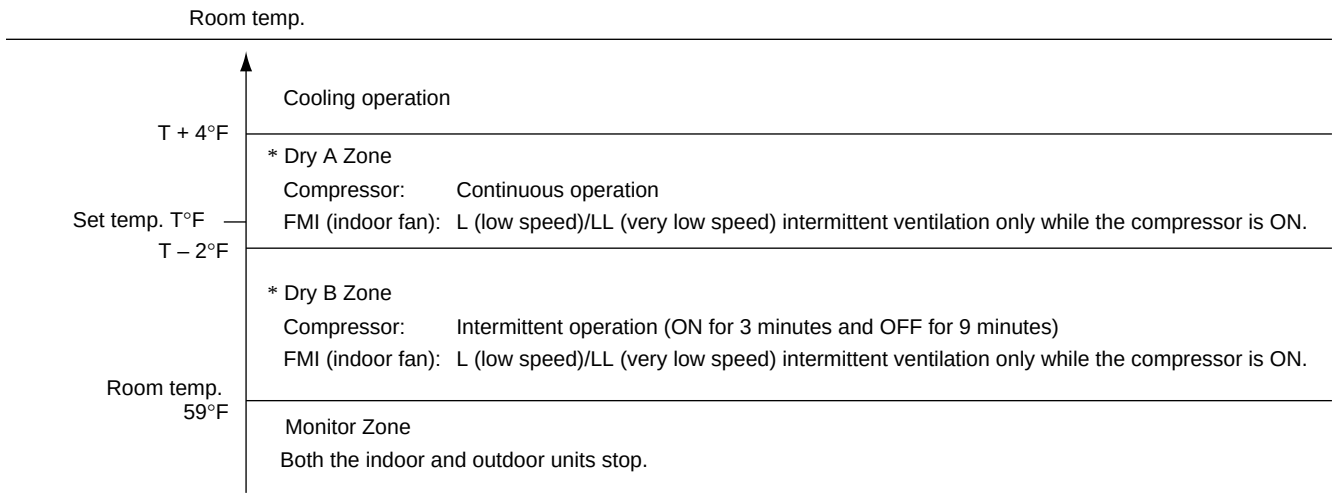
- Room temperature control is obtained by cycling the compressor ON and OFF under control of the room temperature sensor in the remote control unit.
- The room temperature (and other information) is transmitted every 3 minutes by the remote control unit to the controller in the indoor unit.



- The control circuit will not attempt to turn the compressor ON until the compressor has been OFF for at least 3 minutes. To protect the compressor from stalling out when trying to start against the high side refrigerant pressure, the control circuit has a built-in automatic time delay to allow the internal pressure to equalize.
- As a protective measure, the control circuit switches the compressor OFF after 5 minutes or more of compressor operation.
- Thermo ON : When the room temperature is above T + 2°F (T°F is set temperature).
  Compressor → ON
- Thermo OFF : When the room temperature is equal to or below set temperature T°F.
  Compressor → OFF

8-2. Dry Operation (Dehumidification)

- Dry operation uses the ability of the cooling cycle to remove moisture from the air, but by running at low level to dehumidify without greatly reducing the room temperature. The air conditioner repeats the cycle of turning ON and OFF automatically as shown in the chart below according to the room temperature.

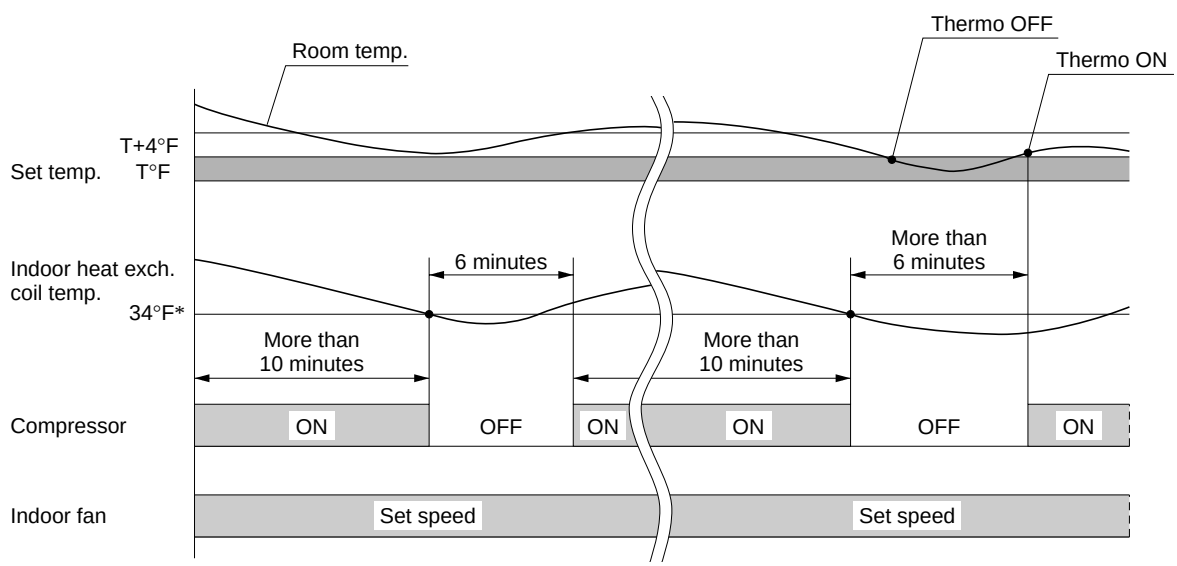

Room temp.
Cooling operation
T + 4°F
* Dry A Zone
Compressor: Continuous operation
Set temp. T°F
FMI (indoor fan): L (low speed)/LL (very low speed) intermittent ventilation only while the compressor is ON.
T – 2°F
* Dry B Zone
Compressor: Intermittent operation (ON for 3 minutes and OFF for 9 minutes)
FMI (indoor fan): L (low speed)/LL (very low speed) intermittent ventilation only while the compressor is ON.
Room temp.
59°F
Monitor Zone
Both the indoor and outdoor units stop.

NOTE

- Intermittent ventilation occurs by switching the indoor fan speed between L ↔ LL.
- Dry operation does not occur when the room temperature is under 59°F, which is the Monitor Zone.
- When the compressor stops, the indoor fan stops as well.

8-3. Freeze Prevention

- This function prevents freezing of the indoor heat exchange coil.
- When the compressor has been running for 10 minutes or more and the temperature of the indoor heat exchange coil falls below 34°F, the control circuit stops the compressor for at least 6 minutes. The compressor does not start again until the temperature rises above 46°F or 6 minutes have elapsed.

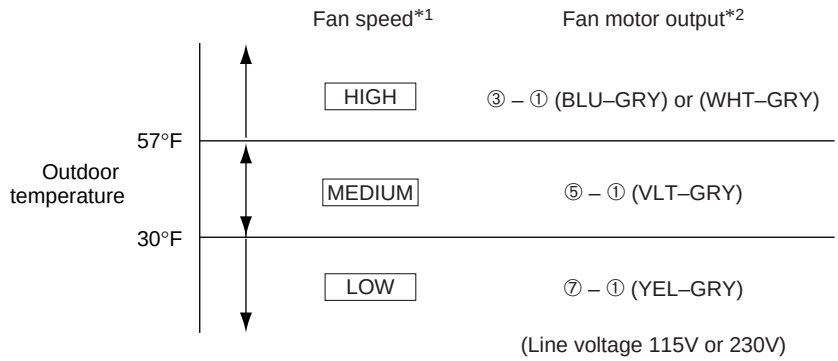


*KS1852: 36°F

8-4. Outdoor Fan Speed Control (CL××××× models only)

Low ambient fan speed control

- This function protects the compressor from being damaged due to flowback of the liquid refrigerant to the compressor when the outdoor temperature is very low.
- When the air temp. thermistor (TH) on the outdoor units detects a change in temperature, the controller on the electrical component box activates to control the fanspeed automatically.
- If the outdoor temperature falls below 57°F, the fan speed switches to MED.
- If the outdoor temperature falls below 30°F, the fan speed switches to LOW.



*1 Regardless of outdoor temperature, outdoor fan motor operates at first at HIGH speed for 23 ± 5 seconds to give the motor an initial boost.

*2 When the fan speed switches, the controller terminal's location where line voltage comes out (○–○) shifts accordingly.

9. TROUBLESHOOTING

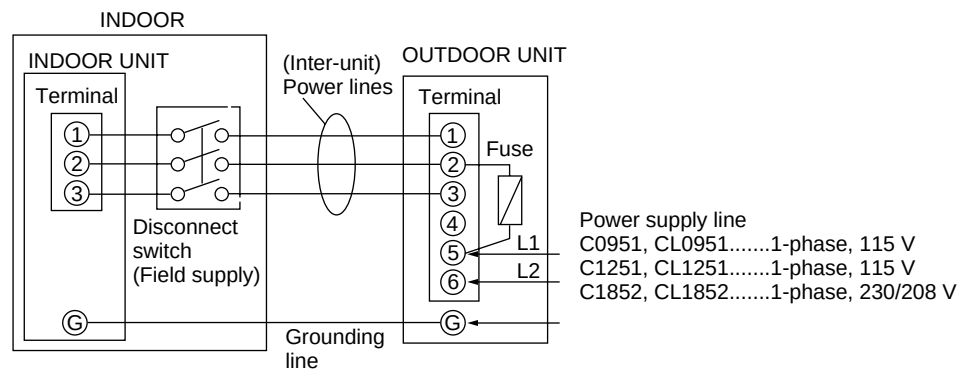
9-1. Check before and after troubleshooting

WARNING

Hazardous voltage can cause ELECTRIC SHOCK or DEATH. Disconnect power or turn off circuit breaker before you start checking or servicing.

9-1-1. Check power supply wiring

- Check that power supply wires are correctly connected to terminals No. 5 and No. 6 on the terminal plate in the outdoor unit.



9-1-2. Check inter-unit wiring

- Check that inter-unit wiring is correctly connected to the indoor unit from the outdoor unit.

9-1-3. Check power supply

- Check that voltage is in specified range (±10% of the rating).
- Check that power is being supplied.

9-1-4. Check lead wires and connectors in indoor and outdoor units

- Check that coating of lead wires is not damaged.
- Check that lead wires and connectors are firmly connected.
- Check that wiring is correct.

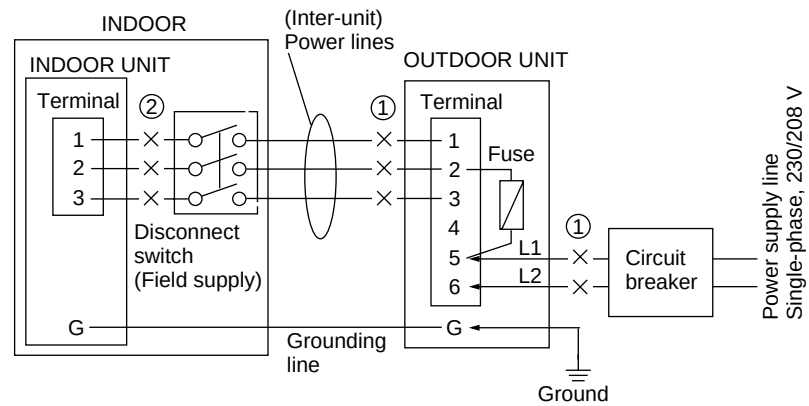
9-2. Air Conditioner Does Not Operate

9-2-1. Circuit breaker trips (or fuse blows)

A. When the circuit breaker is set to ON, it is tripped soon. (Resetting is not possible.)

- There is a possibility of ground fault.
- Check insulation resistance.

If resistance value is 1MΩ or less, insulation is defective (“NO”).



WARNING

*Set circuit breaker to OFF.

① Remove both power supply wires and inter-unit wires from terminal plate in outdoor unit.
- Measure insulation resistance of outdoor unit.

NO → Insulation of outdoor unit is defective.

- Measure insulation resistance of electrical parts in outdoor unit.

② Remove inter-unit wires from terminal plate in indoor unit.
- Measure insulation resistance of indoor unit.

NO → Insulation of indoor unit is defective.

- Measure insulation resistance of electrical parts in indoor unit.

B. Circuit breaker trips in several minutes after turning the air conditioner on.

- There is a possibility of short circuit.

- Check capacity of circuit breaker.

  Capacity of circuit breaker is suitable.

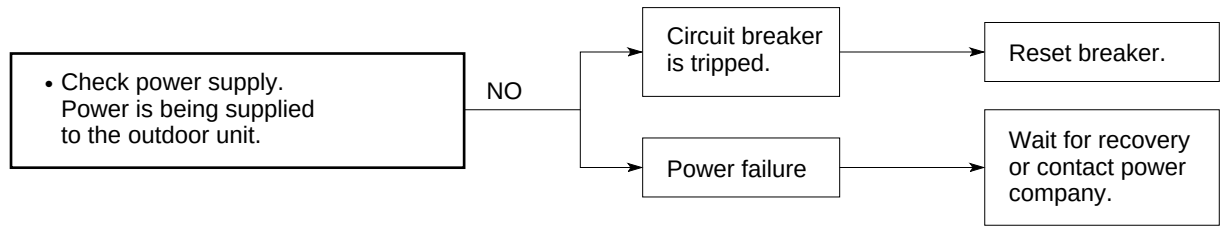
NO → Replace with suitable one (larger capacity).

- Measure resistance of outdoor fan motor winding.

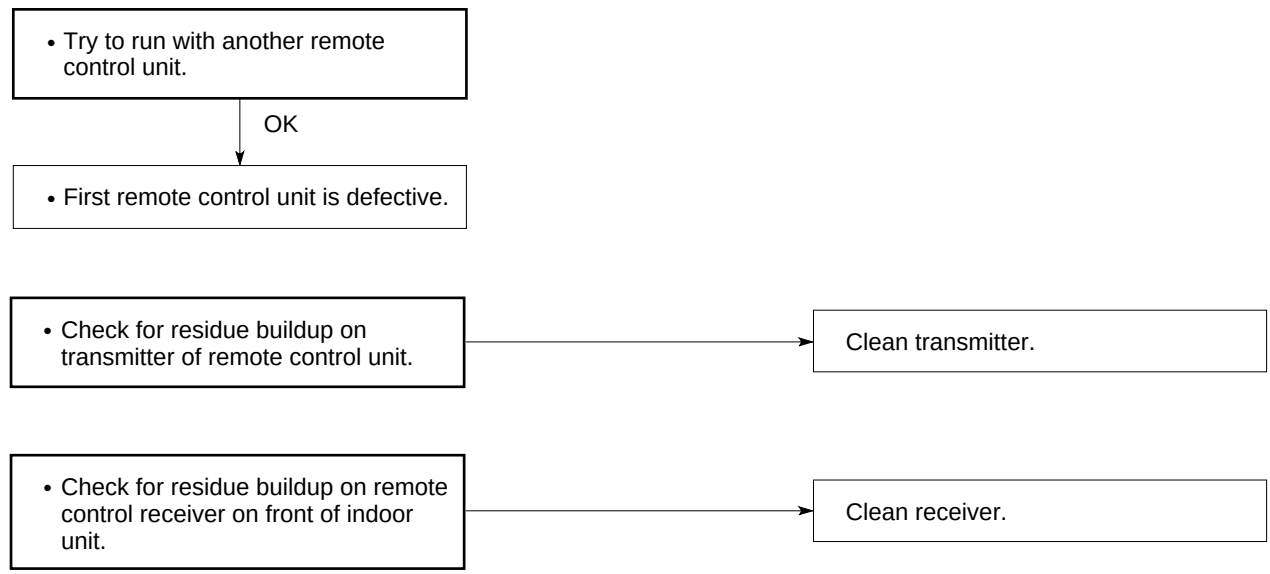
- Measure resistance of compressor motor winding.

9-2-2. Neither indoor nor outdoor unit runs

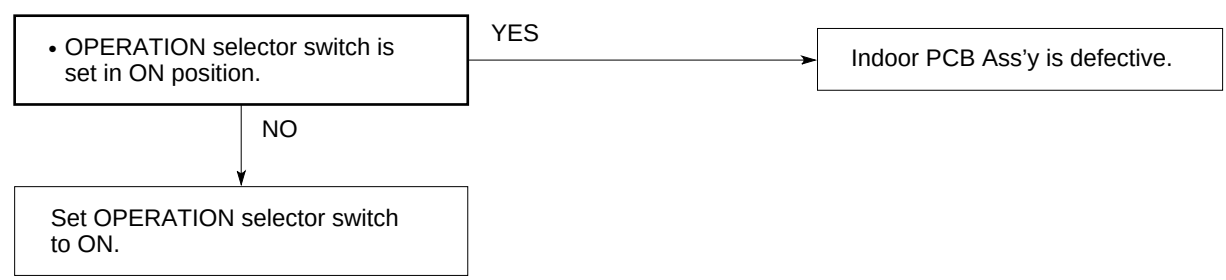
A. Power is not supplied.



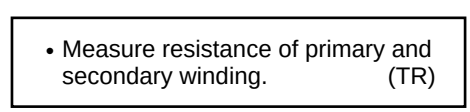
B. Check remote control unit.


• Try to run with another remote
control unit.
OK
• First remote control unit is defective.
• Check for residue buildup on
transmitter of remote control unit.
Clean transmitter.
• Check for residue buildup on remote
control receiver on front of indoor
unit.
Clean receiver.

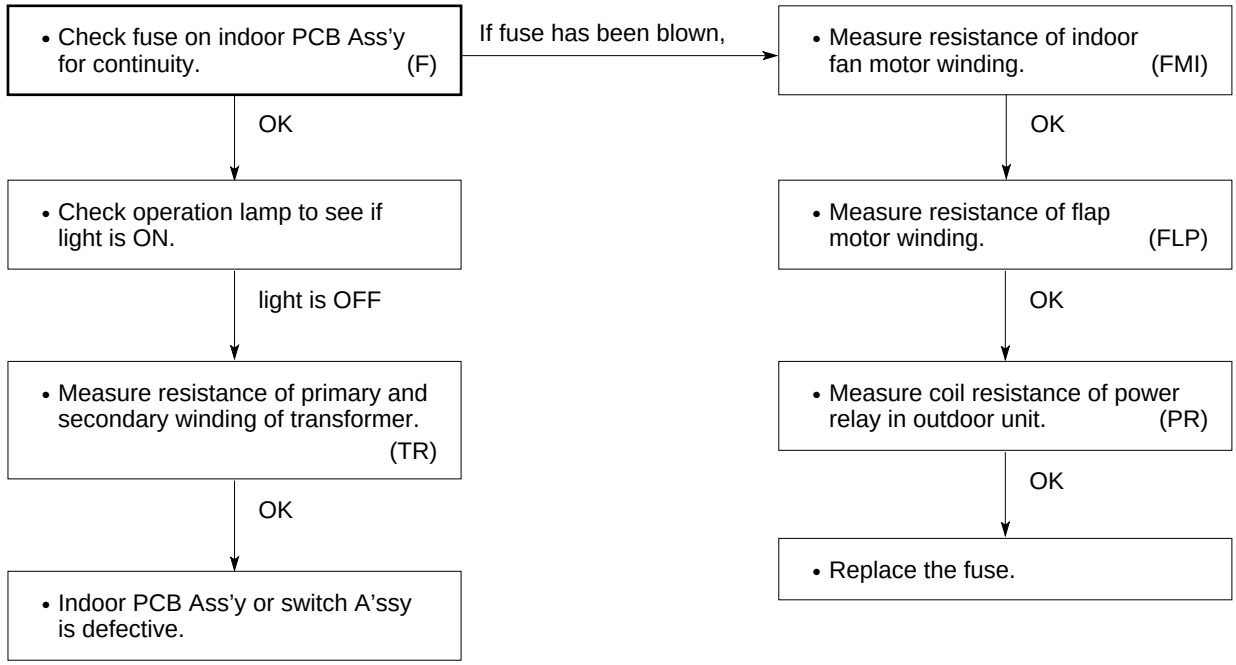
C. Check “operation selector” switch in the indoor unit.



D. Check transformer in indoor unit.



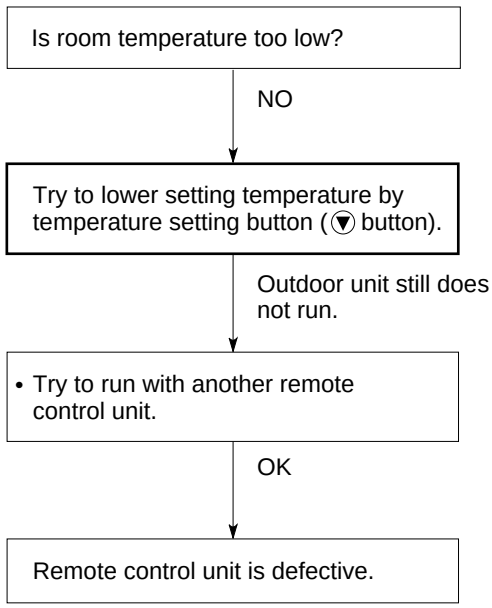
E. Check fuse on the indoor PCB Ass'y.


• Check fuse on indoor PCB Ass'y for continuity. (F)
If fuse has been blown,
• Measure resistance of indoor fan motor winding. (FMI)
OK
OK
• Check operation lamp to see if light is ON.
• Measure resistance of flap motor winding. (FLP)
light is OFF
OK
• Measure resistance of primary and secondary winding of transformer. (TR)
• Measure coil resistance of power relay in outdoor unit. (PR)
OK
OK
• Replace the fuse.
• Indoor PCB Ass'y or switch A'ssy is defective.

F. Check TIMER SELECT button on the remote control unit.

9-2-3. Only outdoor unit does not run

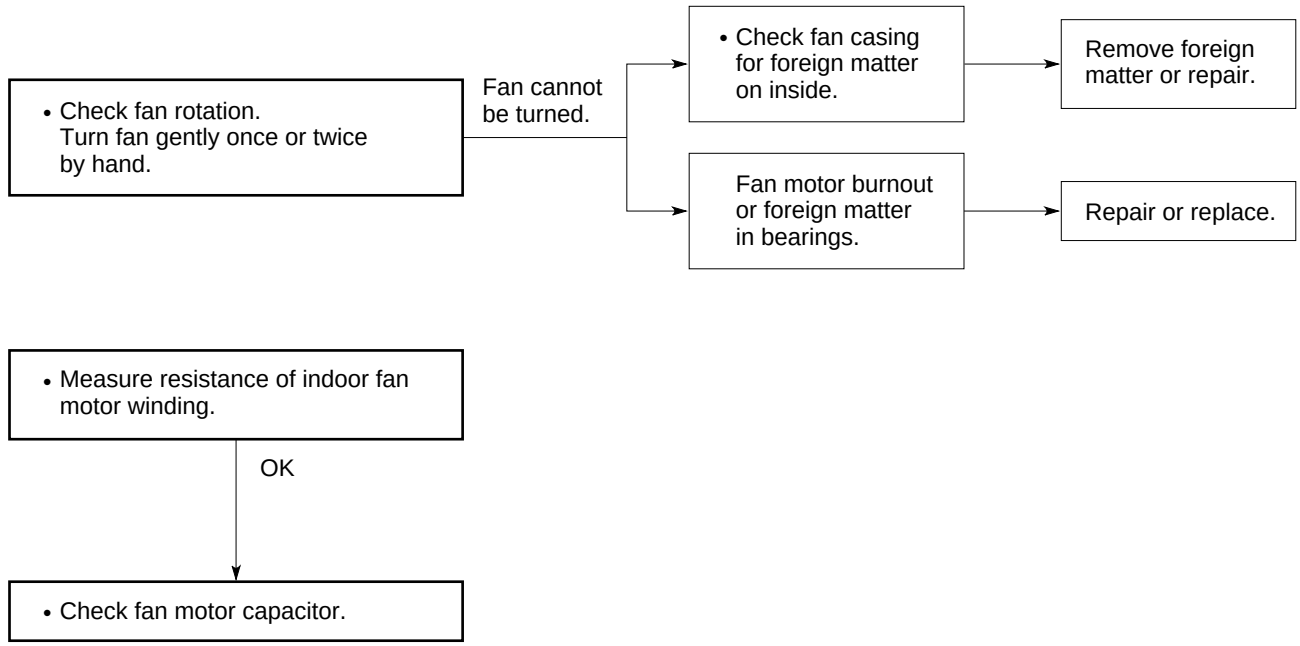
A. Check setting temperature.


Is room temperature too low?
NO
Try to lower setting temperature by temperature setting button (▼ button).
Outdoor unit still does not run.
• Try to run with another remote control unit.
OK
Remote control unit is defective.

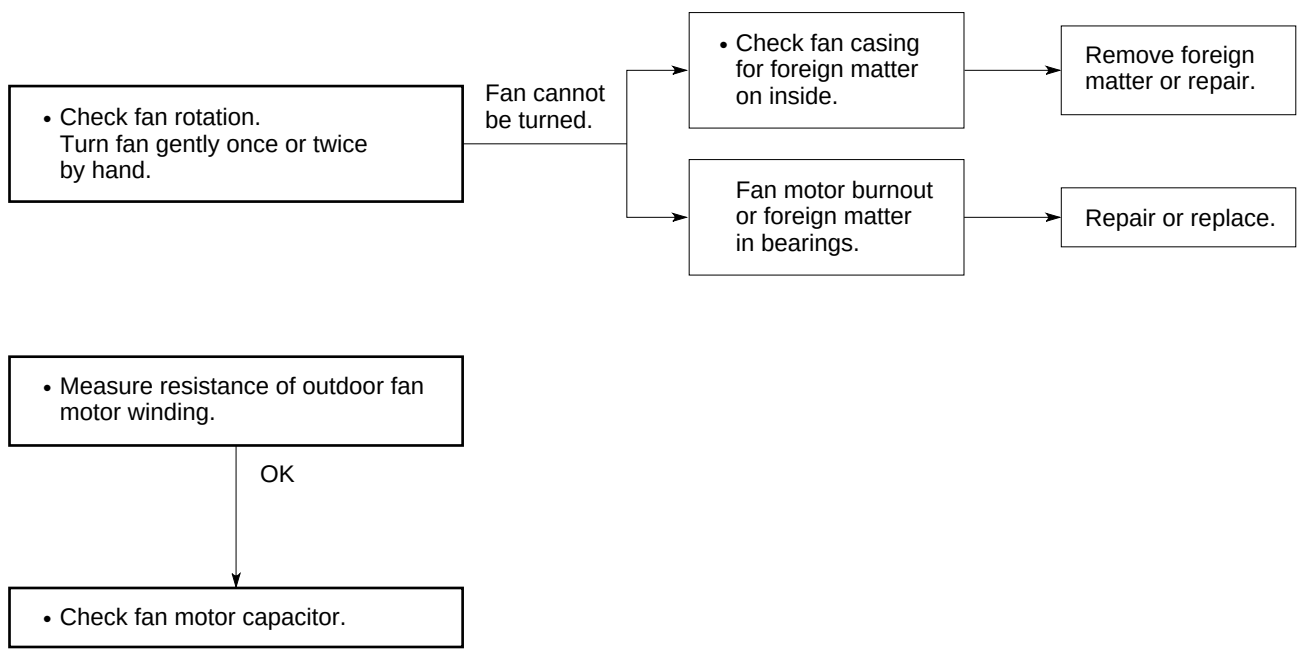
B. Check PCB Ass'y in either indoor or outdoor unit.

9-3. Some Part of Air Conditioner Does Not Operate

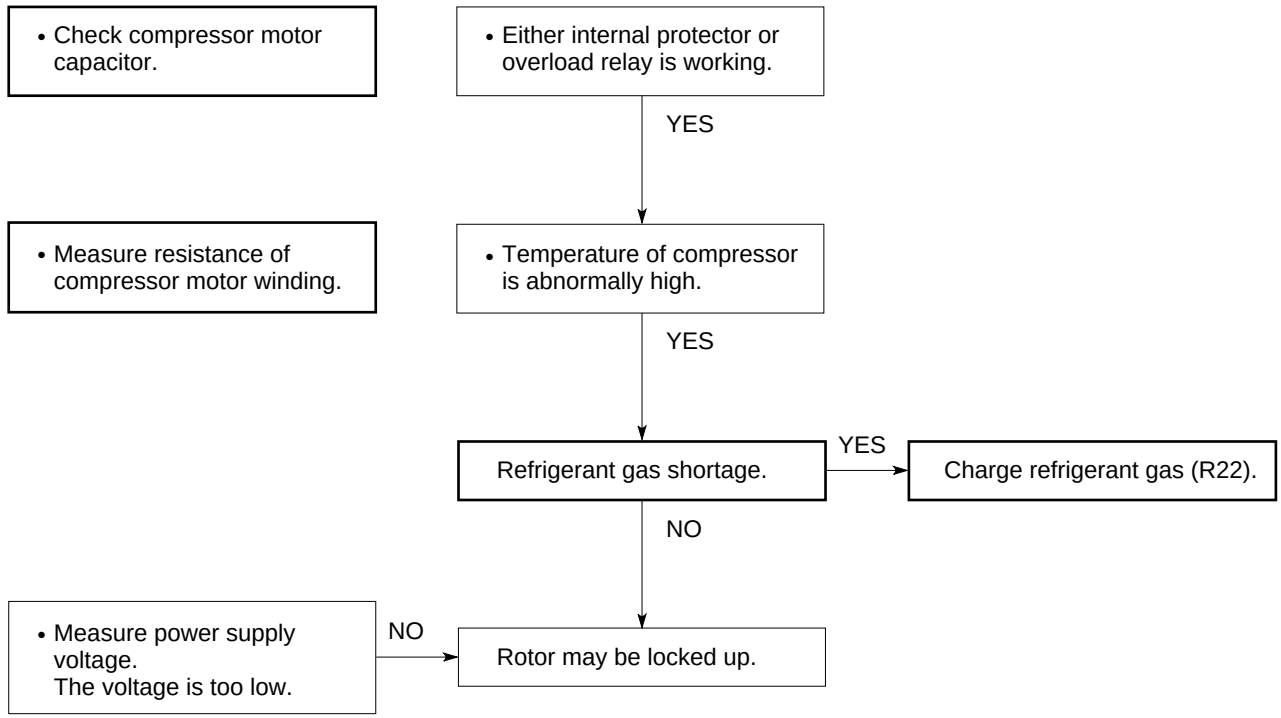
9-3-1. Only indoor fan does not run



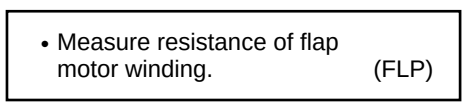
9-3-2. Only outdoor fan does not run



9-3-3. Only compressor does not run



9-3-4. Only flap motor does not run

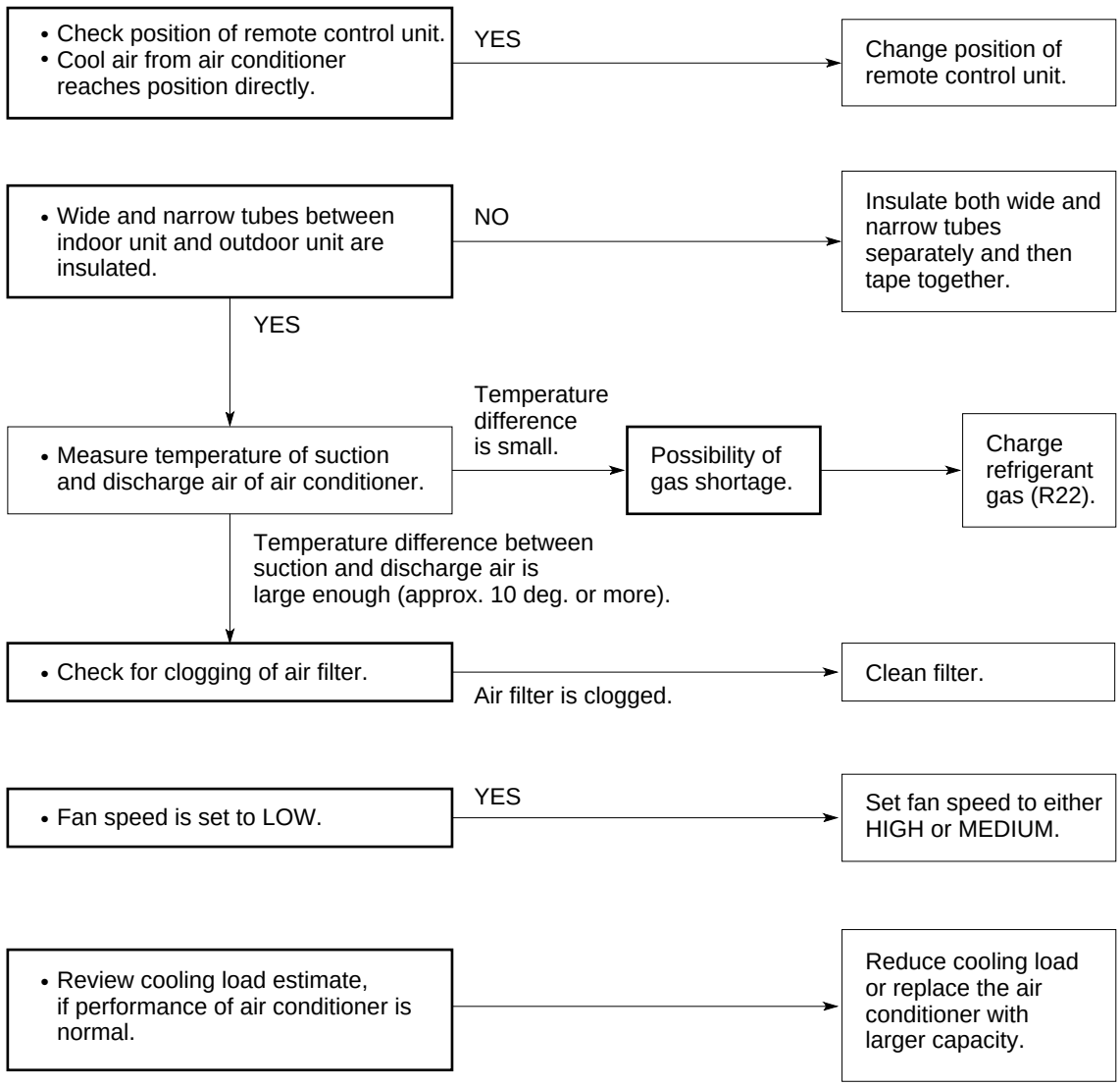


9-3-5. Function of outdoor fan speed control does not work properly. (CLxx5x models only)

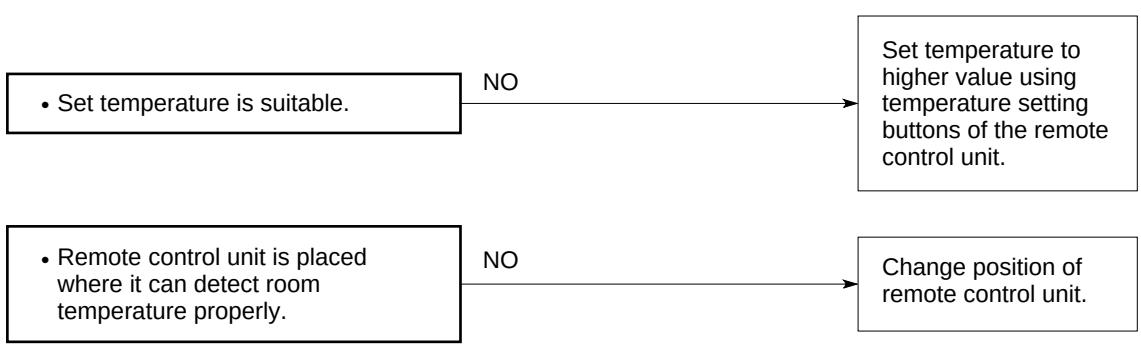
Refer to 8-4 "Outdoor Fan Speed Control."

9-4. Air Conditioner Operates, but Abnormalities are Observed

9-4-1. Only indoor fan does not run


• Check position of remote control unit.
• Cool air from air conditioner reaches position directly.
YES
Change position of remote control unit.
• Wide and narrow tubes between indoor unit and outdoor unit are insulated.
NO
Insulate both wide and narrow tubes separately and then tape together.
YES
• Measure temperature of suction and discharge air of air conditioner.
Temperature difference is small.
Possibility of gas shortage.
Charge refrigerant gas (R22).
Temperature difference between suction and discharge air is large enough (approx. 10 deg. or more).
• Check for clogging of air filter.
Air filter is clogged.
Clean filter.
• Fan speed is set to LOW.
YES
Set fan speed to either HIGH or MEDIUM.
• Review cooling load estimate, if performance of air conditioner is normal.
Reduce cooling load or replace the air conditioner with larger capacity.

9-4-2. Excessive cooling


• Set temperature is suitable.
NO
Set temperature to higher value using temperature setting buttons of the remote control unit.
• Remote control unit is placed where it can detect room temperature properly.
NO
Change position of remote control unit.

9-5. If a sensor is defective.

9-5-1. Indoor coil temp. thermistor (TH1) is defective

A. Open

When thermistor opens, the air conditioner will be in the following conditions as the controller tries to detect extremely low room temperature.

In cooling mode: Function of freeze prevention continues to work. That is, the controller turns both compressor and outdoor fan motor periodically ON and OFF for several minutes. (Refer to “8-3. Freeze Prevention”)

B. Short

When thermistor is shorted, the air conditioner will be in the following conditions as the controller tries to detect extremely high coil temperature.

In cooling mode: Function of freeze prevention will not work even when the frost builds up on indoor heat exchanger coil.

9-5-2. Room temp. thermistor (TH2) is defective

A. Open

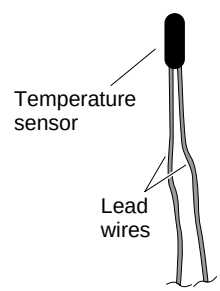
When thermistor opens, the air conditioner will be in the following conditions as the controller tries to detect extremely low room temperature.

In cooling mode: The air conditioner soon stops and will not start again. (Thermo. OFF) Neither outdoor fan nor compressor runs.

B. Short

When thermistor is shorted, the air conditioner will be in the following conditions as the controller tries to detect extremely high coil temperature.

In cooling mode: The air conditioner continues to operate. (Thermo. ON) Both the outdoor fan and compressor do not stop. As a result, the room becomes too cold.



Thermistor Structure

NOTE

Definition of Open or Short Circuit of Sensor (Thermistor)

When thermistor is shorted, the air conditioner will be in the following conditions as the controller tries to detect extremely high coil temperature.

Open … A lead wire is broken or disconnected or the circuit inside the temperature sensor is open.

Short … The protective cover of a lead wire has been damaged, and the exposed wire is touching another metal part, or both lead wires have become exposed and are touching each other. Alternatively, the circuit inside the temperature sensor is closed.

10. CHECKING ELECTRICAL COMPONENTS

10-1. Measurement of Insulation Resistance

- The insulation is in good condition if the resistance exceeds 2MΩ.

10-1-1. Power Supply Wires

Clamp the ground wire of the power supply wires with the lead clip of the insulation resistance tester and measure the resistance by placing a probe on either of the power wires. (Fig. 1)

Then measure the resistance between the ground wire and the other power wire. (Fig. 1)

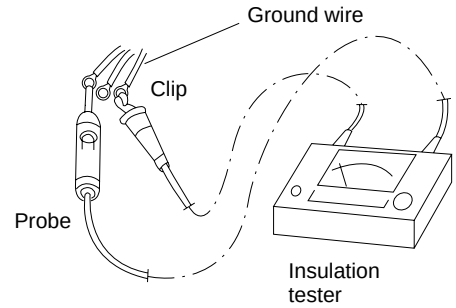


Fig. 1

10-1-2. Indoor Unit

Clamp an aluminum plate fin or copper tube with the lead clip of the insulation resistance tester and measure the resistance by placing a probe on each terminal screw on the terminal plate. (Fig. 2)

Note that the groundline terminal should be skipped for the check.

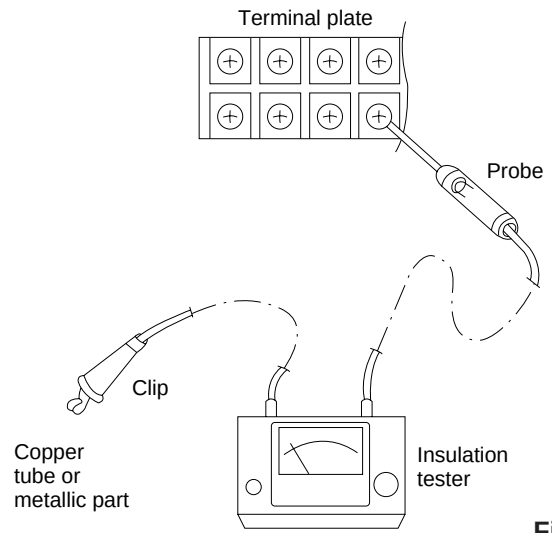


Fig. 2

10-1-3. Outdoor Unit

Clamp an aluminum plate fin or copper tube with the lead clip of the insulation resistance tester and measure the resistance by placing a probe on each terminal screw where power supply lines are connected on the terminal plate. (Fig. 2)

10-1-4. Measurement of Insulation Resistance for Electrical Parts

Disconnect the lead wires of the desired electric part from terminal plate, capacitor, etc. Similarly disconnect the connector. Then measure the insulation resistance. (Figs. 3 and 4)

NOTE

Refer to Electric Wiring Diagram.

If the probe cannot enter the poles because the hole is too narrow then use a probe with a thinner pin.

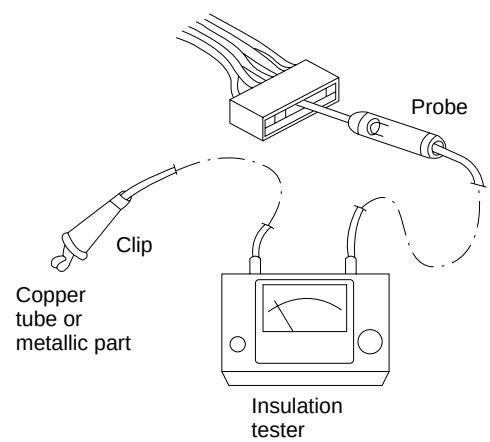


Fig. 3

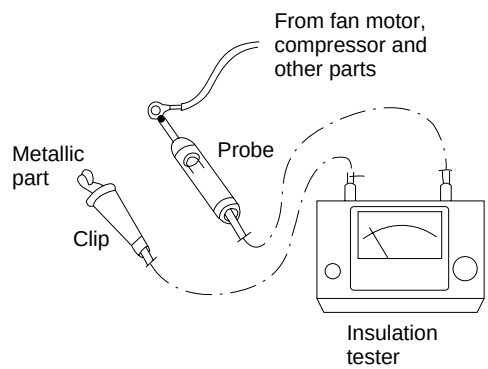


Fig. 4

10-2. Checking Continuity of Fuse on PCB Ass'y

- Remove the PCB Ass'y from the electrical component box. Then pull out the fuse from the PCB Ass'y. (Fig. 5)
- Check for continuity using a multimeter as shown in Fig. 6.

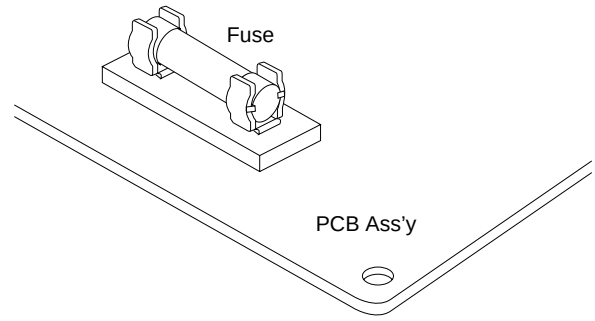


Fig. 5

10-3. Checking Motor Capacitor

Remove the lead wires from the capacitor terminals, and then place a probe on the capacitor terminals as shown in Fig. 7. Observe the deflection of the pointer, setting the resistance measuring range of the multimeter to the maximum value.

The capacitor is "good" if the pointer bounces to a great extent and then gradually returns to its original position.

The range of deflection and deflection time differ according to the capacity of the capacitor.

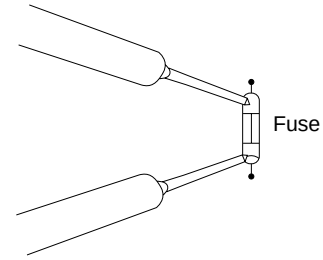


Fig. 6

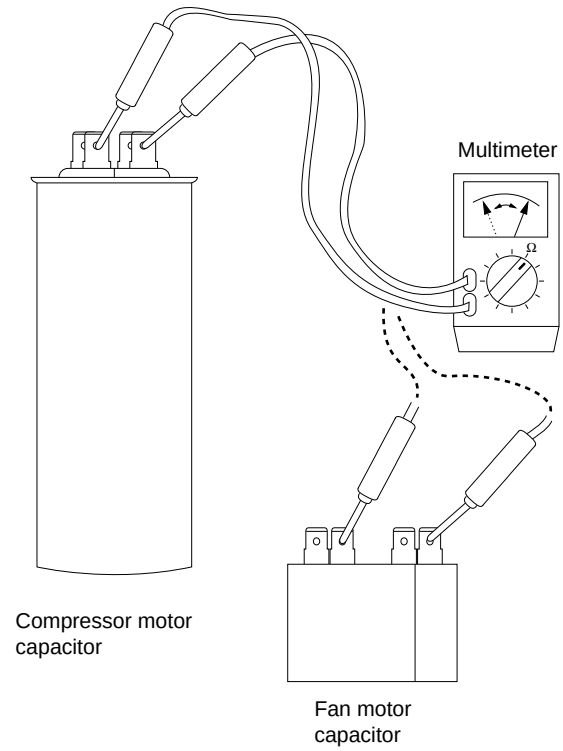


Fig. 7

APPENDIX INSTRUCTION MANUAL

KS0951 + C0951
CL0951

KS1251 + C1251
CL1251

KS1852 + C1852
CL1852

SANYO

INSTRUCTION MANUAL

COOL/DRY Model

Split System Air Conditioner

KS0951
KS1251
KS1852

Save These Instructions!

VERIFIED
CSA
Energy
Performace
Rendement
Énergétique
VÉRIFIÉ

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Features

This air conditioner is equipped with cooling and drying functions. Details on these functions are provided below; refer to these descriptions when using the air conditioner.

- **Microprocessor Controlled Operation**
  The interior compartment of the remote control unit contains several features to facilitate automatic operation, each logically displayed for easy use.

- **Simple One-touch Wireless Remote Control**
  The remote control unit has several features to facilitate automatic operation.

- **12-Hour ON or OFF Timer**
  This timer can be set to automatically turn the unit on or off at any time within a 12 hour period.

- **1-Hour OFF Timer**
  This timer can be set to automatically turn off the unit at any time after one hour.

- **Night Setback**
  Pressing this button changes the setting of the room temperature thermostat, allowing you to set the temperature at whatever level that you find comfortable.

- **Automatic and 3-step Fan Speed**
  Auto/High/Medium/Low

- **Air Sweep Control**
  This function moves a flap up and down in the air outlet, directing air in a sweeping motion around the room and providing comfort in every corner.

- **Automatic Restart Function for Power Failure**
  Even when power failure occurs, preset programmed operation can be reactivated once power resumes.

- **Anti-Mold Filter**
  This unit is equipped with an anti-mold filter that inhibits the growth of mold and bacteria.

- **Optional Air Clean Filter**
  An air filter that uses activated charcoal to eliminate unpleasant odors and clean the air is available (sold separately).

Contents

Page

Features 2
Product Information 3
Alert Symbols 3
Installation Location 4
Electrical Requirements 4
Safety Instructions 4
Names of Parts 5
Using the Remote Control Unit 10
Operation with the Remote Control Unit 12
1. Manual Operation 12
2. Adjusting the Fan Speed 13
3. Night Setback Mode 14
Special Remarks 15
Using the 12-Hour ON and OFF Timer 16
Using the 1-Hour OFF Timer 17
Adjusting the Airflow Direction 18
Operation without the Remote Control Unit 19
Care and Cleaning 19
Tips for Energy Saving 22
Troubleshooting 23
Operating Range 23

Product Information

If you have problems or questions concerning your Air Conditioner, you will need the following information. Model and serial numbers are on the nameplate on the bottom of the cabinet.

Model No. _____ Serial No. _____

Date of purchase _____

Dealer's address _____

Phone number _____

Alert Symbols

The following symbols used in this manual, alert you to potentially dangerous conditions to users, service personnel or the appliance:

WARNING

This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.

CAUTION

This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.

Installation Location

- **We recommend that this air conditioner be installed properly by qualified installation technicians in accordance with the Installation Instructions provided with the unit.**
- Before installation, check that the voltage of the electric supply in your home or office is the same as the voltage shown on the nameplate.

WARNING

- **Do not install this air conditioner where there are fumes or flammable gases, or in an extremely humid space such as a greenhouse.**
- **Do not install the air conditioner where excessively high heat-generating objects are placed.**

Avoid: To protect the air conditioner from heavy corrosion, avoid installing the outdoor unit where salty sea water can splash directly onto it or in sulphurous air near a spa.

Electrical Requirements

1. All wiring must conform to the local electrical codes. Consult your dealer or a qualified electrician for details.
2. Each unit must be properly grounded with a ground (or earth) wire or through the supply wiring.
3. Wiring must be done by a qualified electrician.

Safety Instructions

- **Read this Instruction Manual carefully before using this air conditioner. If you still have any difficulties or problems, consult your dealer for help.**
- **This air conditioner is designed to give you comfortable room conditions. Use this only for its intended purpose as described in this Instruction Manual.**

WARNING

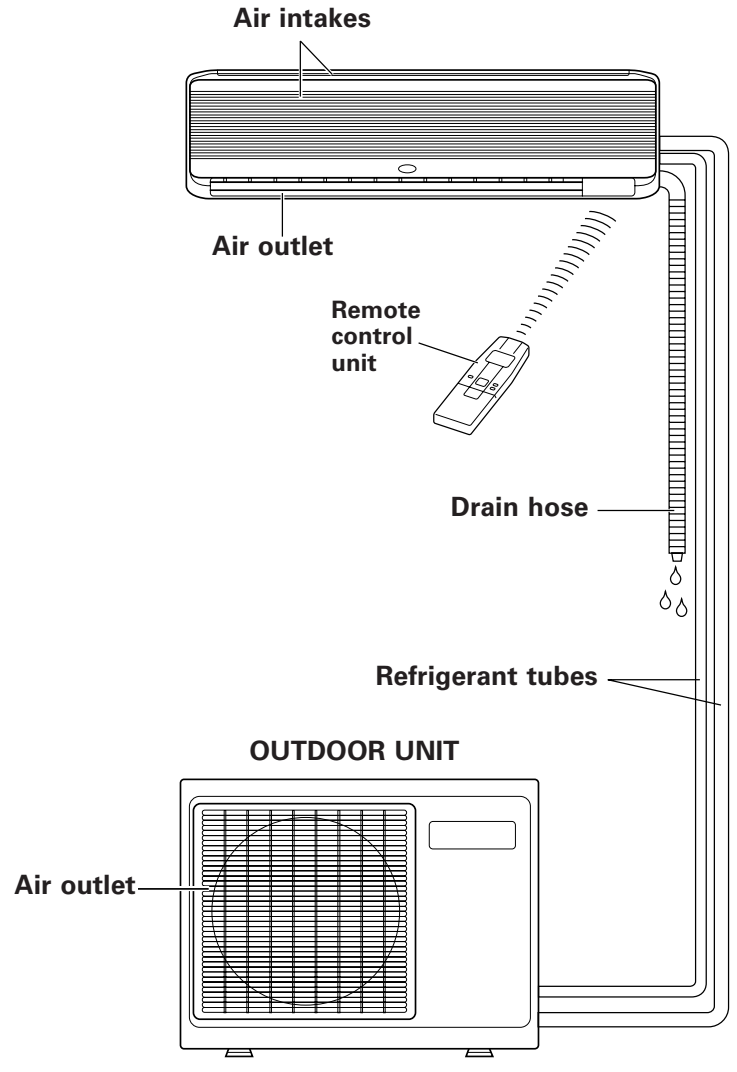
- **Never use or store gasoline or other flammable vapor or liquid near the air conditioner — it is very dangerous.**
- **This air conditioner has no ventilator for intaking fresh air from outdoors. You must open doors or windows frequently when you use gas or oil heating appliances in the same room, which consume a lot of oxygen from the air. Otherwise there is a risk of suffocation in an extreme case.**

CAUTION

- **Do not turn the air conditioner on and off from the power mains switch. Use the ON/OFF operation button.**
- **Do not stick anything into the air outlet of the outdoor unit. This is dangerous because the fan is rotating at high speed.**
- **Do not let children play with the air conditioner.**
- **Do not cool the room too much if babies or invalids are present.**

Names of Parts

INDOOR UNIT

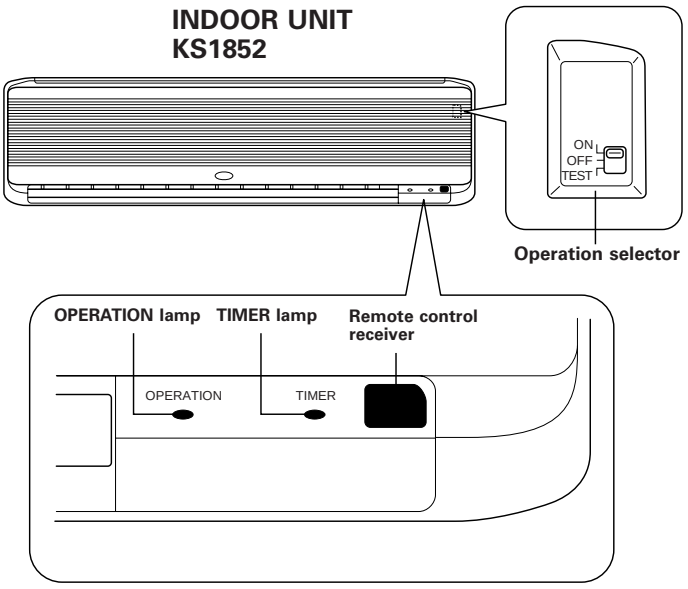


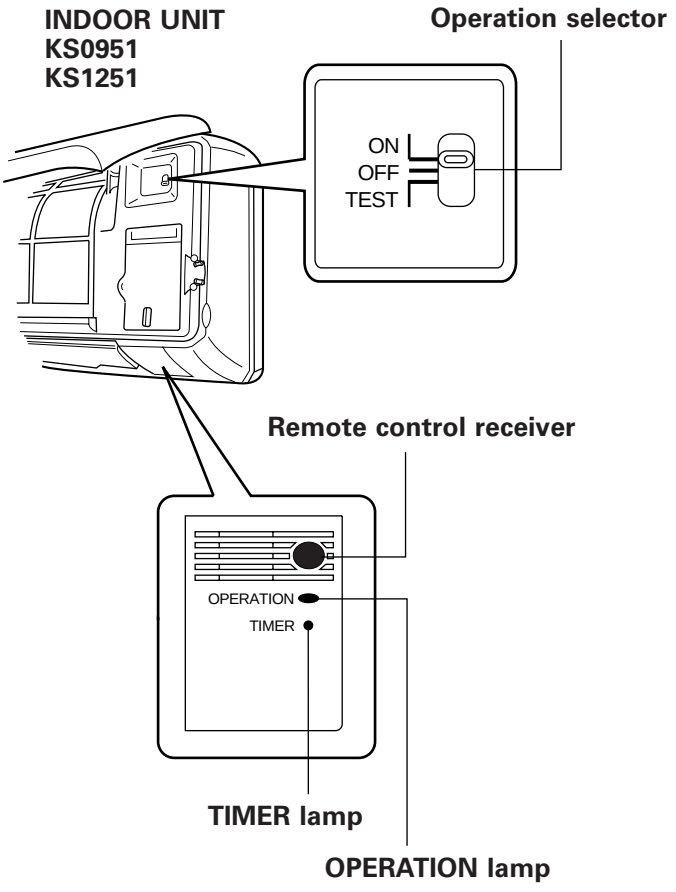
NOTE This illustration is based on the external appearance of a standard model. Consequently, the shape may differ from that of the air conditioner which you have selected.

This air conditioner consists of an indoor unit and an outdoor unit. You can control the air conditioner with the remote control unit.

Air Intakes	Air from the room is drawn into these sections and passes through air filters which remove dust.
Air Outlet	Air is blown out of the air conditioner through the air outlet.
Remote Control Unit	The wireless remote control unit controls power on/off, operation mode selection, temperature, fan speed, timer setting, night setback and air sweeping.
Refrigerant Tubes	The indoor and outdoor units are connected by copper tubes through which refrigerant gas flows.
Drain Hose	Moisture in the room condenses and drains off through this hose.
Outdoor (Condensing) Unit	The outdoor unit contains the compressor, fan motor, heat exchanger coil, and other electrical components.

Unit Display and Operation Selector





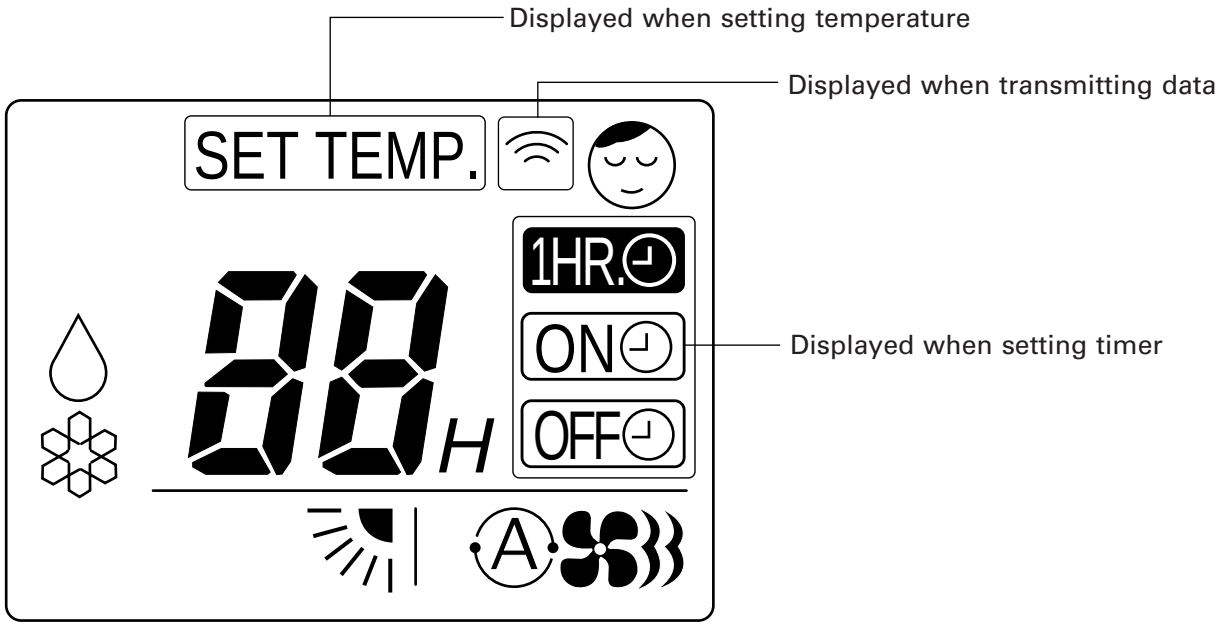
IMPORTANT

Avoid using radio equipment such as mobile phones near (within 1 m of) the indoor unit. Some radio equipment may cause the unit to malfunction.

If the trouble occurs, disconnect power and restart the air conditioner after a few minutes.

Remote control receiver	This section picks up infrared signals from the remote control unit (transmitter).
Operation selector	
ON position	This position is for operating the air conditioner with the wireless remote control unit. Set the selector normally in this position.
OFF position	Switch the selector to the OFF position if you are not going to use the air conditioner for a few days or longer.
WARNING	**The OFF position does not disconnect the power. Use the main power switch to turn off power completely.**
TEST position	This position is used only when servicing the air conditioner.
CAUTION	**Do not set at the TEST position for normal operation.**
OPERATION lamp	This lamp lights when the system is in the continuous DRY and COOL mode.
TIMER lamp	This lamp lights when the system is being controlled by the timer.

Remote Control Unit (Display)



Symbols

(1) Operation mode

MILD DRY.....

COOL.....

(2) Fan speed

AUTO.....

HIGH.....

MEDIUM.....

LOW.....

(3) Temperature setting
60 – 88 °F
When set to 82 °F
temperature indication.....

(4) Timer

12-hour ON Timer.....

12-hour OFF Timer.....

1-hour OFF Timer.....

(5) NIGHT SETBACK.....

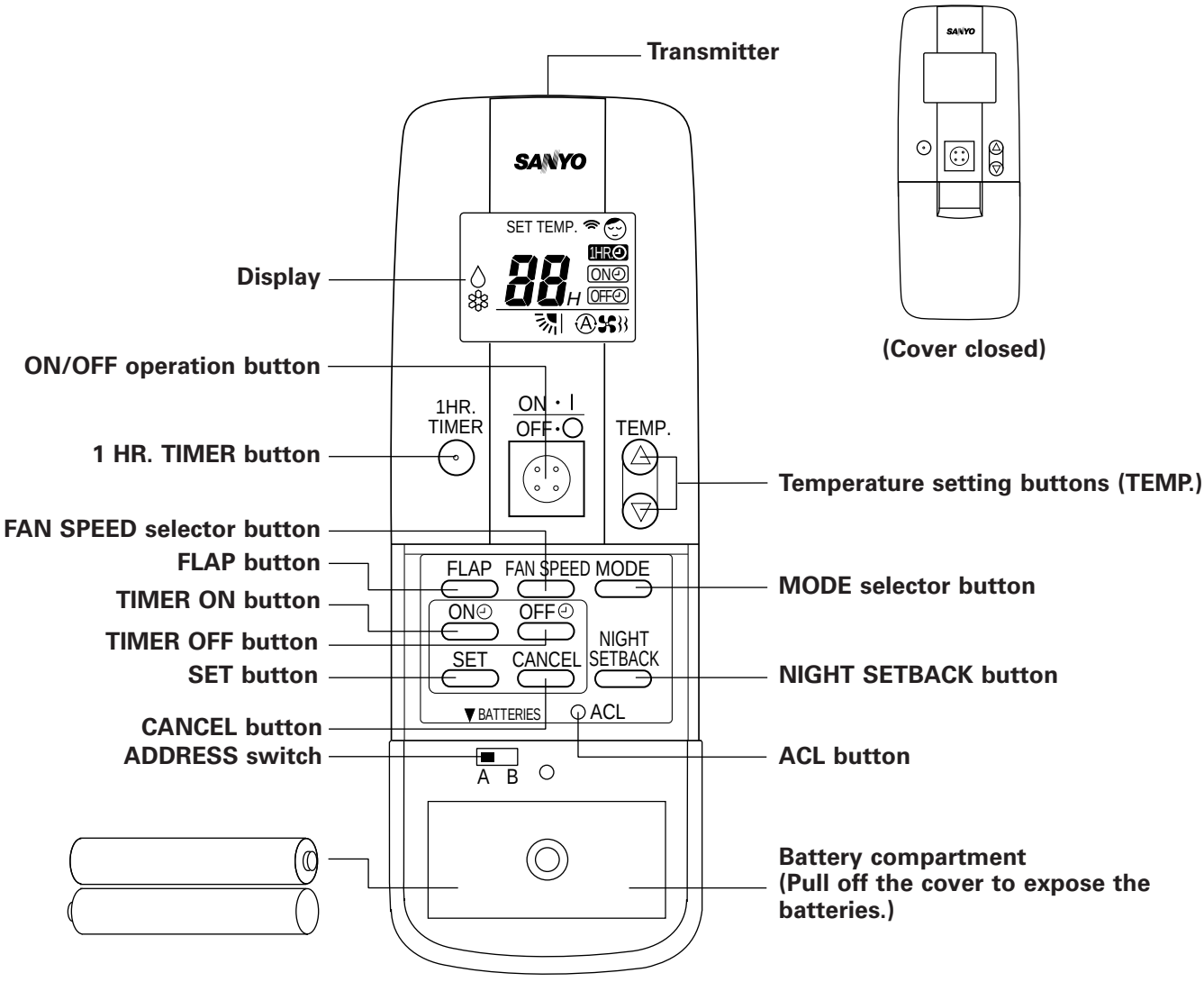
(6) Confirmation of
transmission .....

(7) Flap

Angle indication .....

Sweep indication.....

Remote Control Unit



NOTE The illustration above pictures the remote control unit after the cover has been lowered and removed.

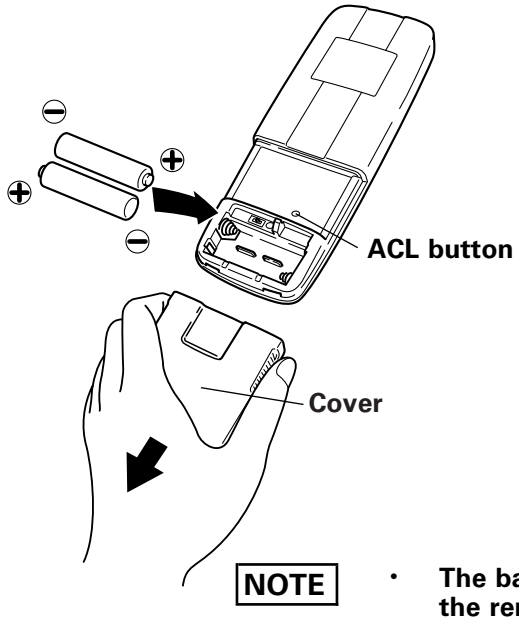
Transmitter	When you press the buttons on the remote control unit, the mark appears in the display and the setting changes are transmitted to the receiver in the air conditioner.
Display	Information on the operating status is displayed while the remote control unit is switched on. If the unit is turned off, only the mode that was set previously is still displayed.
NIGHT SETBACK button	For details, see ''Night Setback Mode''. When you press this button in the DRY or COOL mode, the mark appears in the display, and the remote control unit automatically adjusts the set temperature to save energy.
Temperature setting buttons (TEMP.)	Press the ⏃ button to increase the temperature setting. Press the ⏄ button to reduce the temperature setting.
ON/OFF operation button	This button is for turning the air conditioner on and off.
TIMER ON button	ON : The air conditioner starts at the set time.
TIMER OFF button	OFF : The air conditioner stops at the set time.

Remote Control Unit (continued)

MODE selector button **(DRY)** **(COOL)**	Use this button to select the DRY or COOL mode. : The air conditioner reduces the humidity in the room. : The air conditioner makes the room cooler.
FLAP button **NOTE**	Press this button either to select to set the airflow direction to one of the six possible positions manually, or to select the sweep function, which moves the flap up and down automatically. : The airflow direction can be set manually. (six positions) : The flap moves up and down automatically. To switch to the sweep function ( ) when in the manual ( ) mode, hold down the FLAP button. (Refer to "Adjusting the Air Flow Direction" on page 18.)
FAN SPEED selector button	: The air conditioner automatically decides the fan speed. : High fan speed : Medium fan speed : Low fan speed
1 HR. TIMER button **(1-hour off timer)**	: When you press this button, regardless of whether the unit is operating or stopped, the unit operates for one hour and then shuts down.
ACL button (All clear)	Puts the remote control unit into pre-operation status. Always press this button after replacing the batteries.
SET button	After using the TIMER ON button or TIMER OFF button to set the timer, press this button to activate the new setting.
CANCEL button	Press this button to cancel the current timer ON and OFF setting.
ADDRESS switch	The address switch changes to prevent mixing of signals from remote control units when two Sanyo air conditioners are installed next to each other. Normally, the address switch is set to A. When switching the address, the remote control unit must be changed to B. For more information, please contact the dealer where you made the purchase.

Using the Remote Control Unit

How to Install Batteries



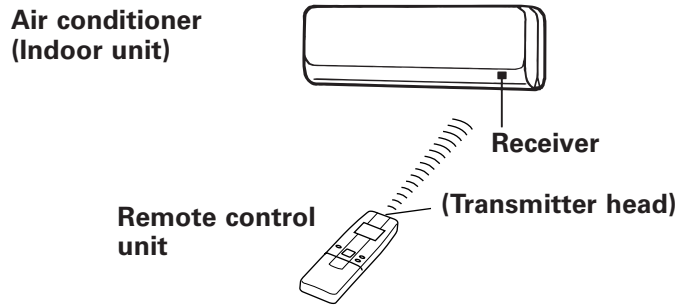
1. Slide the cover in the direction indicated by the arrow and remove it.
2. Install two AAA alkaline batteries. Make sure the batteries point in the direction marked in the battery compartment.
3. Use a thin object such as the tip of a pen to press the ACL button.

NOTE

- **The batteries last about six months, depending on how much you use the remote control unit. Replace the batteries when the remote control unit's display fails to light, or when the remote control cannot be used to change the air conditioner's settings.**
- **Use two fresh leak-proof type-AAA alkaline batteries.**
- **In replacing batteries, follow the instructions as mentioned in the sub-section "How to Install Batteries".**
- **If you do not use the remote control unit more than 1 month, take out the batteries.**

How to Use the Remote Control Unit

When using the remote control unit, always point the unit's transmitter head directly at the air conditioner's receiver.



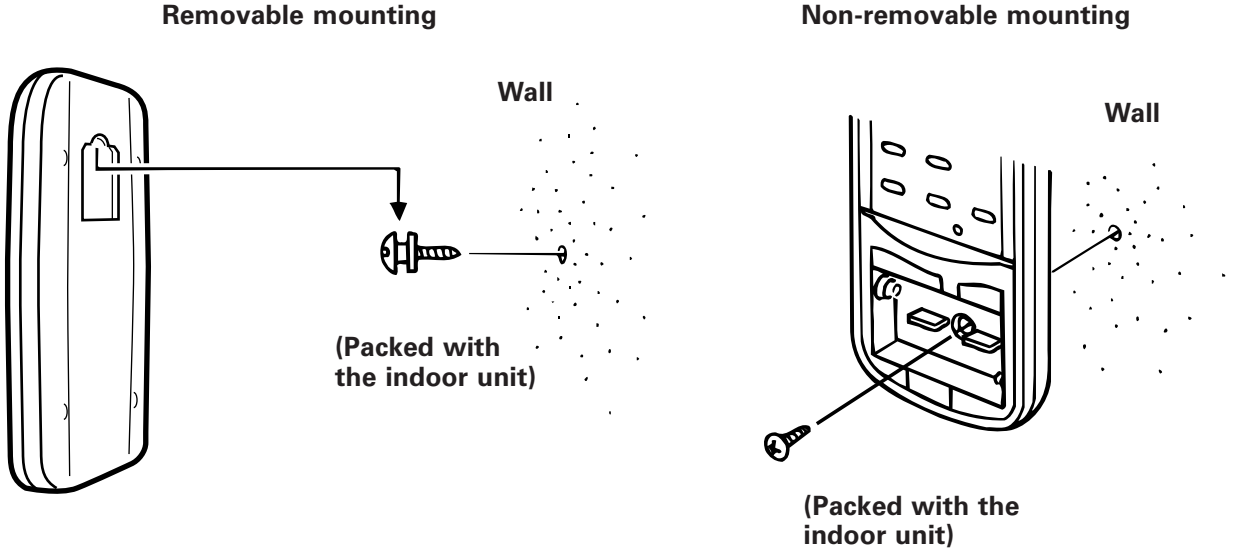
Remote Control Unit Installation Position

The remote control unit may be operated either from a non-fixed position or from a wall-mounted position. To ensure that the air conditioner operates correctly, DO NOT install the remote control unit in the following places:

DO NOT

- In direct sunlight
- Behind a curtain or other places where it is covered
- More than 26 feet (8 m) away from the air conditioner
- In the path of the air conditioner's airstream
- Where it may become extremely hot or cold
- Where it may be subject to electrical or magnetic noise
- Where there is an obstacle between the remote control unit and air conditioner (since a check signal is sent from the remote control unit every 5 minutes)

Mounting the Remote Control Unit



Mounting on a wall

A. Removable mounting

1) Momentarily hold the remote control unit at the desired mounting position.

2) Confirm that the air conditioner responds correctly when you press keys on the remote control from that position.

3) After confirming correct operation, use a screwdriver to screw the mounting screw into the wall.

4) Hang the remote control unit from the mounting screw.

B. Non-removable mounting

1) Momentarily hold the remote control unit at the desired mounting position.

2) Confirm that the air conditioner responds correctly when you press keys on the remote control from that position.

3) After confirming correct operation, use a screwdriver to screw the mounting screw into the wall.

4) Remove the batteries of the remote control unit.

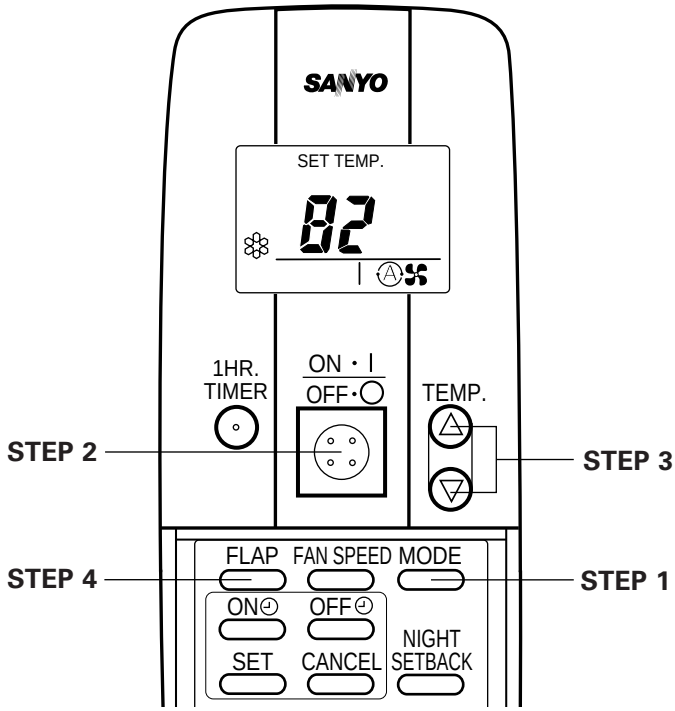
5) Use a screwdriver to screw the remote control unit securing screw into the wall through the hole in the battery compartment.

6) Replace the batteries.

7) Again confirm that the remote control unit operates correctly.

Operation with the Remote Control Unit

1. Manual Operation



NOTE Check that the circuit breaker on the power panel is turned on and that the operation selector of the indoor unit is in the ON position.

If the automatic operation settings of the unit do not meet your needs, press the setting buttons as described below and change the settings as desired.

STEP 1	Press the MODE selector button and select the desired mode. For drying operation → ♢ For cooling operation → ❀
STEP 2	To start the air conditioner, press the ON/OFF operation button.
STEP 3	Press the temperature setting buttons to change the temperature setting to the desired temperature. Adjustable temperature range: 88 °F max. 60 °F min.
NOTE	The temperature setting changes by one degree each time the button is pressed. (The air conditioner remembers the new temperature setting even when it is turned off.)
STEP 4	Press the FLAP button and set the airflow direction as desired. (Refer to "Adjusting the Airflow Direction" on page 18.)

To stop the air conditioner, press the ON/OFF operation button again.

NOTE

- This appliance has a built-in three minutes time delay circuit to ensure reliable operation. When the operation button is pressed, the compressor will start running within three minutes. In the event of power failure, the unit will stop. When the power is restored, the unit will restart automatically after five minutes.

2. Adjusting the Fan Speed

A. Automatic

Simply set the FAN SPEED selector button to the Ⓐ position.

A microcomputer in the air conditioner automatically controls the fan speed when the Ⓐ mode is selected. When the air conditioner starts operating, the difference between the room temperature and the set temperature is detected by the microcomputer which then automatically switches the fan speed to the most suitable level.

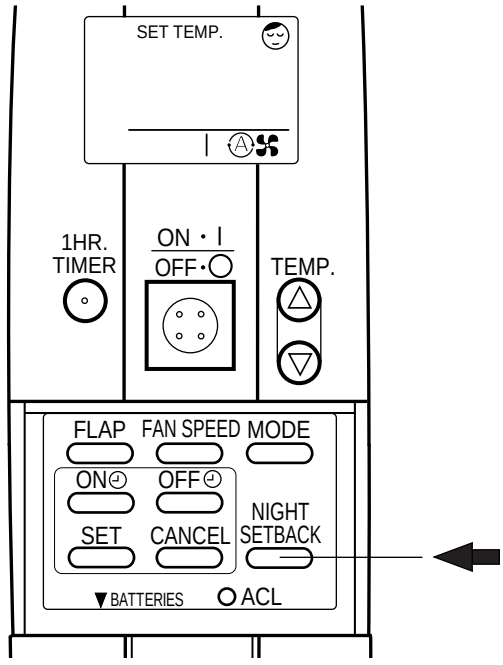
Cooling and DRY mode:

When difference between room temperature and set temperature is	FAN SPEED
4 °F and over	High
Between 4 °F and 2 °F	Medium
Below 2 °F	Low

B. Manual

If you want to adjust fan speed manually during operation, just set the FAN SPEED selector button as desired. [, , or]

3. Night Setback Mode



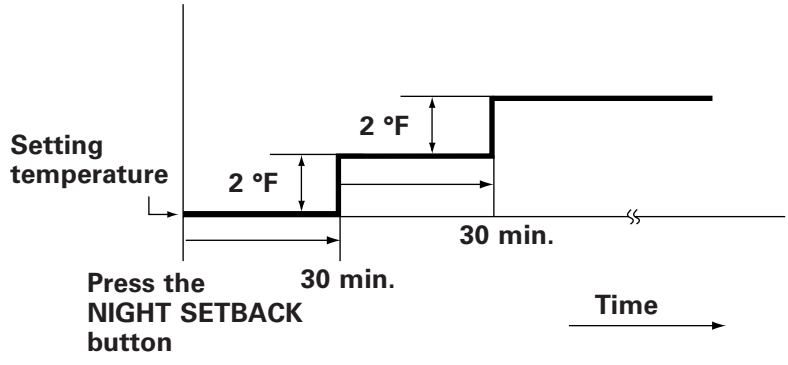
The Night Setback Mode is used for saving energy.

Press the NIGHT SETBACK button while the air conditioner is operating. The mark appears in the display.

To cancel the night setback function, press the NIGHT SETBACK button again.

In Cooling and DRY Mode: (❀ and ◊)

When the night setback mode is selected, the air conditioner automatically raises the temperature setting 2 °F when 30 minutes have passed after the selection was made, and then another 2 °F after another 30 minutes have passed, regardless of the indoor temperature when night setback was selected. This enables you to save energy without sacrificing comfort. This function is convenient when gentle cooling is needed.



Special Remarks

"DRY" (♢) Operation

How it works?

- Once the room temperature reaches the level that was set, the unit repeats the cycle of turning on and off automatically.
- During DRY operation, the fan speed is automatically set to LOW or VERY LOW; the fan speed then switches back and forth between LOW (for 20 seconds) and VERY LOW (for 10 seconds).
- "DRY" operation is not possible if the indoor temperature is 59 °F or less.

Power failure during operation

- In the event of power failure, the unit will stop. When the power is turned on again, the unit restarts within five minutes.

Clicking Sound

Clicking sound is heard from the air conditioner

- In cooling and drying operation, any plastic parts may expand or shrink due to a sudden temperature change. In this event, a clicking sound may occur. This is normal, and the sound will soon disappear.

Remote Control Unit

- The remote control unit sends the setting condition to the air conditioner regularly at five minute intervals.

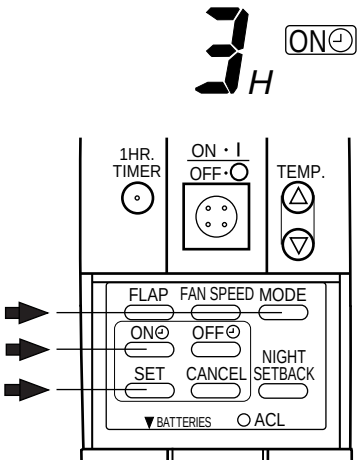
IMPORTANT

KS1852 and CL1852 Combination

- When this unit is combined with the CL1852 outdoor unit, set the indoor airflow to medium or high when the outdoor temperature drops below 32 °F to prevent condensation from forming at the indoor unit.

Using the 12-Hour ON and OFF Timer

1. TIMER ON mode (Example)



After the length of time set for TIMER ON elapses, the unit begins operating.

The display depicted at left indicates that the air conditioner will begin operating in three hours.

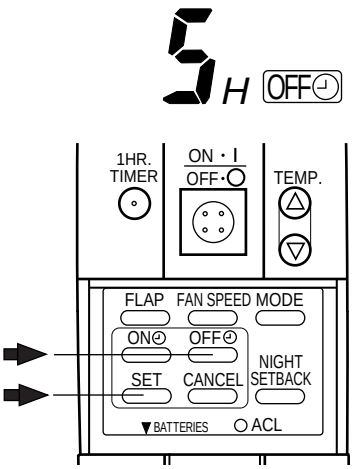
Setting procedure:

STEP 1	Press the MODE selector button and select the desired operation mode. (See "Operation with the Remote Control Unit," page 12.)
STEP 2	Press the TIMER ON button (which advances the time delayed). (To set the time at which you want operation to begin) The time can be set to from one to twelve hours, in one hour steps. → 1 → 2 → 3.....12 →
STEP 3	Press the SET button.

- The display changes immediately to its status previous to timer setting, but the ON indication remains.
- To check the status of the timer while it is counting down, press the SET button.

Cancellation procedure: Press the CANCEL button.

2. TIMER OFF mode (Example)



After the length of time set for TIMER OFF elapses, the unit stops operating.

The display depicted at left indicates that the air conditioner will stop operating in five hours.

Setting procedure:

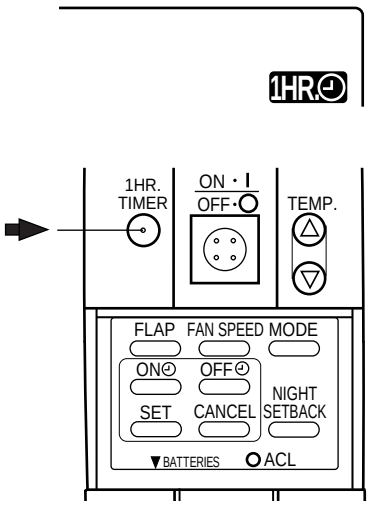
STEP 1	Press the TIMER OFF button during operation (which advances the time displayed). (To set the time at which you want operation to stop) The time can be set to from one to twelve hours, in one hour steps. → 1 → 2 → 3.....12 →
STEP 2	Press the SET button.

- The display changes immediately to its status previous to timer setting, but the OFF indication remains.
- To check the status of the timer while it is counting down, press the SET button.

Cancellation procedure: Press the CANCEL button.

Using the 1-Hour OFF Timer

1. 1-Hour OFF Timer



This function causes the unit to operate for one hour and then stop, regardless of whether the unit is on or off when the button is pressed.
The 1HR. indicator in the display indicates that this function is operating.

Setting procedure:
Regardless of whether the unit is operating or stopped, press the 1 HR. TIMER button.
1HR. appears in the display.

Cancellation procedure:
Press the ON/OFF operation button to turn the unit off, wait for the unit to stop operating, and then press the ON/OFF operation button again. The 1-Hour Timer function is now cancelled and the unit operates normally.

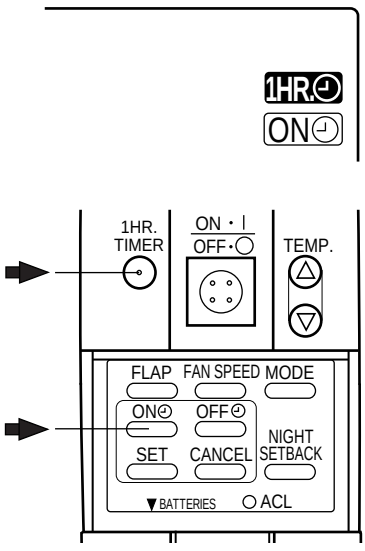
NOTE

- If, while the 1-Hour Timer function is operating, the 1 HR. TIMER button is pressed once to cancel the function and then again, the unit continues to operate for one hour from that point in time and then stops.
- If the 1 HR. TIMER button is pressed while the TIMER OFF function is operating, the OFF Timer is cancelled and the unit stops operating one hour later.

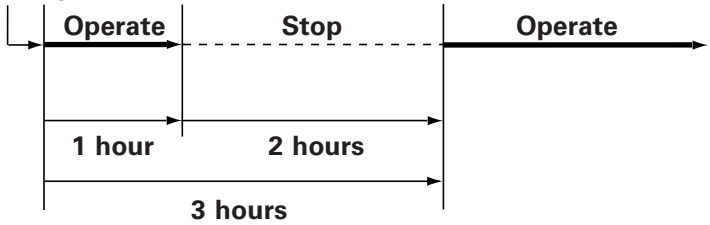
2. Combining the 1-Hour OFF Timer and 12-Hour ON Timer

By combining the 1-Hour OFF Timer and 12-Hour ON Timer, it is possible to have the unit operate for just one hour from the present time, and then have it switch on again later at a time specified by you.

(Example) Having the unit operate for just one hour from the present time, and then switch on again three hours from the present time.



Timer setting



Setting procedure:

STEP 1	Press the 1 HR. TIMER button.
STEP 2	Press the TIMER ON button and use the SET button to set the unit to turn on three hours later.

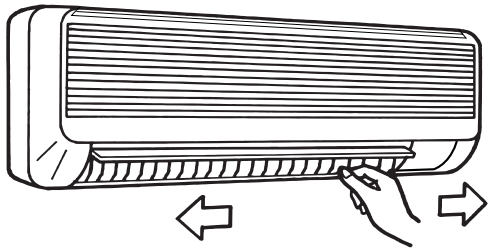
NOTE

- **Set the 1-Hour OFF Timer and the 12-Hour ON Timer simultaneously.** Unless you set the 1-Hour OFF Timer and the 12-Hour ON Timer at the same time, the 1-Hour OFF Timer may operate for one hour or more.

Adjusting the Airflow Direction

1. Horizontal

The horizontal airflow can be adjusted by moving the vertical vanes with your hands to the left or right.

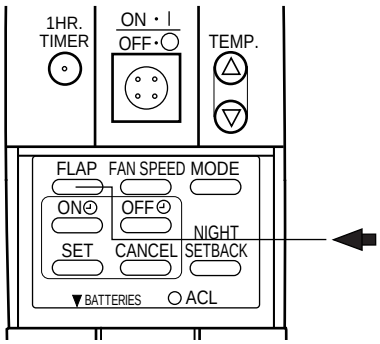


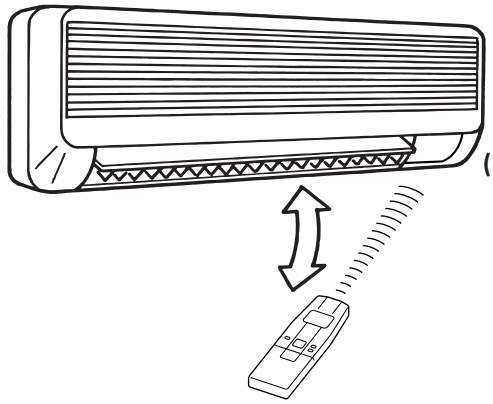
CAUTION

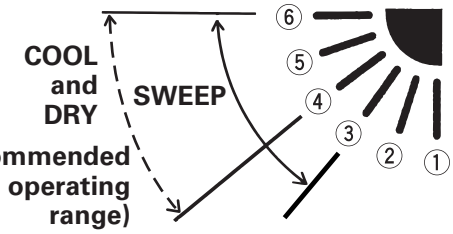
When the humidity is high, the vertical vanes should be in the front position during the cooling or drying operation. If the vertical vanes are positioned all of the way to the right or left, condensation may begin to form around the air vent and drip down.

2. Vertical

The vertical airflow can be adjusted by moving the flap with the remote control unit. Do not move the flap with your hands. Confirm that the remote control unit has been turned on. Use the FLAP button to set either the sweep function or one of the six airflow direction settings.
(The maximum capacity is obtained at the position at ④.)







A. Sweep function

The flap starts moving up and down to deliver air over the sweep range.

B. Setting the airflow manually

Referring to the above illustration, use the FLAP button to set the airflow direction within the range used during the cooling, or drying operation.

NOTE

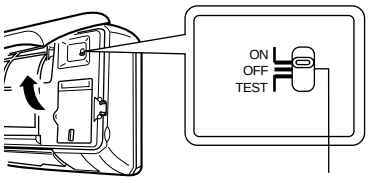
- The flap automatically closes when the unit is off.

CAUTION

- Use the FLAP button on the remote control to adjust the position of the flap. If you move the flap by hand, the flap position according to the remote control and the actual flap position may no longer match. If this should happen, shut off the unit, wait for the flap to close, and then turn on the unit again; the flap position will now be normal again.
- Do not have the flap pointed down during cooling operation. Condensation may begin to form around the air vent and drip down.

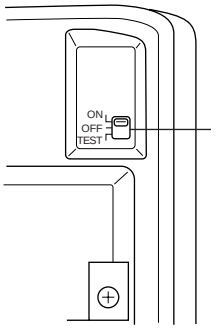
Operation without the Remote Control Unit

INDOOR UNIT
KS0951
KS1251



Operation selector

KS1852



Operation selector

If you have lost the remote control unit or it has trouble, follow the steps below.

1. When the air conditioner is not running
If you want to turn on the air conditioner, switch the operation selector to the OFF position, and then to the ON position.

NOTE The set temperature and fan speed are automatically set at the last selection before stopping.

2. When the air conditioner is running
If you want to turn off the air conditioner, switch the operation selector to the OFF position.

Care and Cleaning

WARNING

1. **For safety, be sure to turn the air conditioner off and also to disconnect the power before cleaning.**
2. **Do not pour water on the indoor unit to clean it. This will damage the internal components and cause an electric shock hazard.**

Casing and Grille (Indoor Unit)

Clean the casing and grille of the indoor unit with a vacuum cleaner brush, or wipe them with a clean, soft cloth.

If these parts are stained, use a clean cloth moistened with a mild liquid detergent. When cleaning the grille, be careful not to force the vanes out of place.

CAUTION

1. **Never use solvents, or harsh chemicals when cleaning the indoor unit. Do not wipe the plastic casing using very hot water.**
2. **Some metal edges and the fins are sharp and may cause injury if handled improperly; be especially careful when you clean these parts.**
3. **The internal coil and other components of the outdoor unit must be cleaned every year. Consult your dealer or service center.**

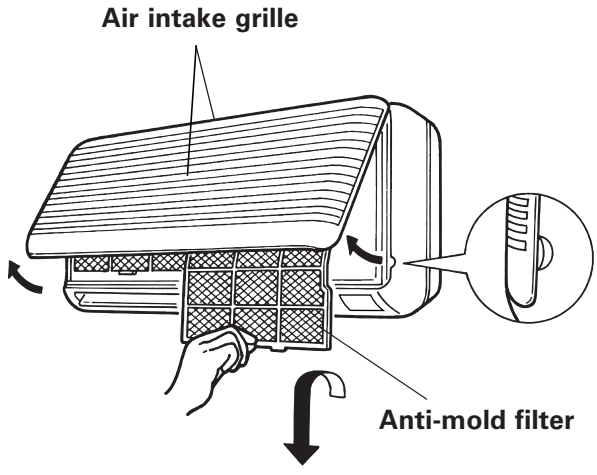
Care and Cleaning (continued)

Anti-mold filter

The anti-mold filter behind the air intake grille should be checked and cleaned at least once every two weeks.

How to remove the anti-mold filter

1. Grasp both ends of the air intake grille and pull it out and up.
2. Push the anti-mold filter up slightly, and then pull it down.

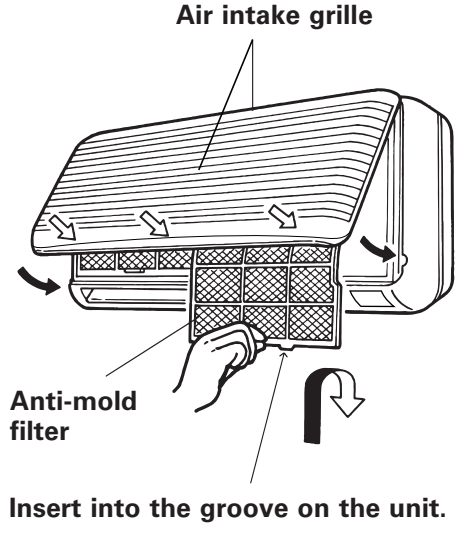


Cleaning

Use a vacuum cleaner to remove light dust. If there is sticky dust on the filter, wash the filter in lukewarm, soapy water, rinse it in clean water and dry it.

How to replace the anti-mold filter

1. With the "FRONT" mark facing you, slide the anti-mold filter up into the unit and then lower the handle into the groove on the unit.
2. After installing the anti-mold filter, press the locations marked by the arrows (⇩) and close the air intake grille.



Air cleaning filter (not provided)

The air cleaning filter removes dust and dirt from the air, and reduces odors and smoke from tobacco.

NOTE

KS0951/KS1251
The air cleaning filter is not provided with the air conditioner and must be purchased separately. The first time that you buy the air clean filter, it is necessary to get the **STK-ARF4B** model with frame. When changing the filter subsequently, it is only necessary to replace the filter itself (model **STK-F4B**). Do not throw away the filter frame.

KS1852
The air clean filter is not provided with the air conditioner and must be purchased separately.
Ask for the **STK-F4B** model when purchasing.

WARNING

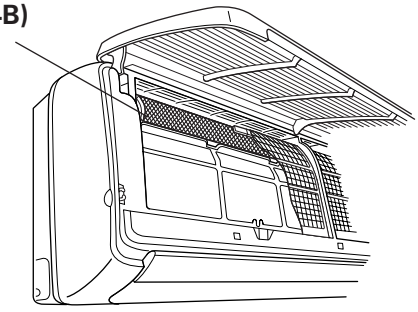
The air cleaning filter cannot remove harmful gases or vapors nor ventilate air in the room. You must open doors or windows frequently when you use gas or oil heating appliances. Otherwise there is a risk of suffocation in extreme cases.

How to install the air cleaning filter

The air cleaning filter needs to be installed behind the anti-mold filter.

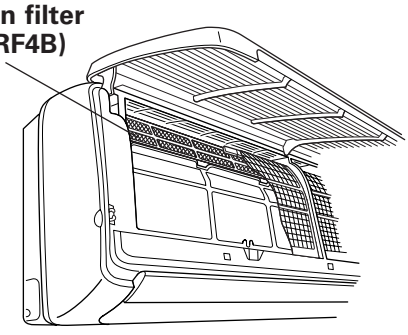
1. Remove the anti-mold filter.
2. To mount the STK-F4B, set the air clean filter(sold separately) at the mounting position with the black side facing the rear. To mount the STK-ARF4B, mount the air clean filter in the position shown in the diagram with the (STK-F4B) FRONT marking facing the front.
3. Reinstall the anti-mold filter, and close the suction grill.

Air clean filter (STK-F4B)



KS1852

Air clean filter (STK-ARF4B)



KS0951/KS1251

NOTE

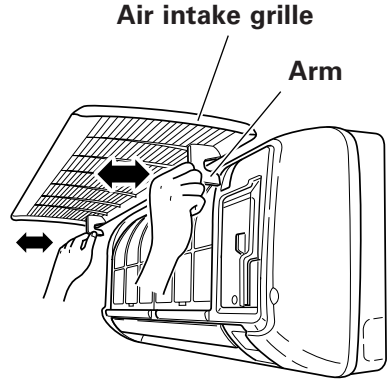
- **In general, the filter should be replaced once every three months.**
- Dirty air clean filters cannot be washed and reused. Purchase a replacement filter at your local dealer.

Cleaning the main unit and remote control unit

- Wipe clean using a soft, dry cloth.
- To remove stubborn dirt, moisten a cloth in warm water no hotter than 104 °F, wring thoroughly, and then wipe.
- The air intake grille can be removed in order to wash it with water.

Removing and remounting the air intake grille

- With the air intake grille open all the way, grip both arms with your hands and pull toward you to remove.
  To remount, hold the air intake grille roughly horizontal and push it in until the arm shafts fit into the indentations in the main unit, then fit the grille into place.



CAUTION

When using a footstool or the like, be careful not to let it tip over.

Washing the grille with water

- Clean the grille gently using a soft sponge, or the like. Then wipe away any remaining moisture.
- Neutral detergent may be used to remove stubborn dirt. Then rinse thoroughly with water and wipe away any remaining moisture.

Tips for Energy Saving

Do not

- **Block the air intake and outlet of the unit. If they are obstructed, the unit will not work well, and may be damaged.**
- Let direct sunlight into the room. Use sunshades, blinds or curtains. If the walls and ceiling of the room are warmed by the sun, it will take longer to cool the room.

Do

- Always try to keep the air filter clean. (Refer to ''Care and Cleaning''.) A clogged filter will impair the performance of the unit.
- To prevent conditioned air from escaping, keep windows, doors and any other openings closed.

Troubleshooting

If your air conditioner does not work properly, first check the following points before requesting service. If it still does not work properly, contact your dealer or service center.

Trouble	Possible Cause	Remedy
Air conditioner does not run at all.	1. Power failure. 2. Leakage circuit breaker tripped. 3. Line voltage is too low. 4. Operation button is OFF. 5. Batteries in remote control unit have run down.	1. Restore power. 2. Contact service center. 3. Consult your electrician or dealer. 4. Press the button again. 5. Replace batteries.
OPERATION lamp flashes and air conditioner does not operate.	Trouble in wiring system.	Contact service center.
Compressor runs but soon stops.	Obstruction in front of condenser coil.	Remove obstruction.
Poor cooling performance.	1. Dirty or clogged air filter. 2. Heat source or many people in room. 3. Doors and/or windows are open. 4. Obstacle near air intake or air discharge port. 5. Thermostat is set too high for cooling.	1. Clean air filter to improve airflow. 2. Eliminate heat source if possible. 3. Shut them to keep the heat out. 4. Remove it to ensure good airflow. 5. Set the temperature lower.
Clicking sound is heard from the air conditioner.	In cooling and drying operation, any plastic parts may expand or shrink due to a sudden temperature change. In this event, a clicking sound may occur.	This is normal, and the sound will soon disappear.
OPERATION lamp lights but outdoor unit will not run.	1. The use of portable telephones near the air conditioner may cause disturbance to its normal operation.	1. Turn off the power then restart the air conditioner after 1 minute. 2. Consult your dealer.

Operating Range

The air conditioner is operable within the temperature ranges as listed below:

	Temperature	Indoor Air Intake Temperature	Outdoor Air Intake Temperature
Cooling Model	Maximum	95 °F DB/71 °F WB	115 °F DB
	Minimum	67 °F DB/57 °F WB	67 °F DB
Low Ambient Temperature Model	Maximum	95 °F DB/71 °F WB	115 °F DB
	Minimum	67 °F DB/57 °F WB	0 °F DB

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